



THE

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तदेव युक्तं भैषज्यं यदारोग्याय कल्पते ।
सचैव भिषजां श्रेष्ठो रोगेभ्यो यः प्रमोचयेत् ।
चरकसंहिता ।

That alone is the right medicine which can remove disease :
He alone is the true physician who can restore health.

Charaka Sanhita.

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CHOLERA.

XI.

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New School or Homœopathic Treatment (continued.)

V.—**The Stage of Sequelæ.**—It is usual to consider the Sequelæ under the head of Reaction. But as they are developed after reaction, and as reaction is not necessarily and invariably followed by them, we have formed a distinct stage of them.

The treatment of the sequelæ taxes in the highest degree the judgment and discrimination of the practitioner. Hope is naturally aroused in the mind of the patient as well as of those around, when reaction succeeds collapse. And certainly it is a great disappointment if reaction, instead of being followed by recovery, terminates in death. This would look like a storm-tossed vessel being wrecked when about to be brought to the harbour. It is therefore absolutely necessary that we should be thoroughly acquainted with the pathological conditions which may be developed after reaction is established, not only that we may the better grapple with them, but likewise that we may not be taken by surprise, when an unfavorable result happens.

The sequelæ are the morbid affections or diseases which become developed after the system has recovered from the collapse. They are due either to the ravages of the disease itself, or to the treatment adopted for the subdual of the disease, or to both these

causes combined: The forms which they assume are in general the expression of an original, inherent weakness of the organism in all or some of its parts. Thus if the brain has been the weakest organ, it suffers most; if the lungs, they will suffer most, and so on. Or the drugs used might determine the organ which is likely to become most affected. Thus the use of narcotics in excess might cause the cerebral organs to suffer most; the use of astringents might give rise to suppression of the natural secretions; the use of stimulants might determine congestion or even inflammation of the lungs; and so on. ;

Apart from the shock which the nervous system receives, the most obvious and the most dangerous effect of the disease is the draining away of the water of the blood. The water carries off with it the salts but not the albumen of the serum. The blood, therefore, that circulates in the system, becomes thicker in consistency. This circumstance must greatly interfere with its passage through the capillaries. This is aided by the loss of tonicity of the capillaries themselves, chiefly owing to depression of the sympathetic system. Hence the congestion of all the viscera is a grand sequela of the disease. This congestion necessarily interferes with the functions of the viscera. Thus the liver fails to secrete the bile, the kidneys to secrete the urine, the stomach to secrete the proper gastric juice, the intestines their own juices, the lungs to aerate the blood, the nervous centres to properly control the parts over which they preside, and so on.

There is, then, more or less congestion in all the organs in every case of cholera; but it is not in every case that congestion in every organ amounts to appreciable disease. One organ or another becomes the seat of diseased action according to its own idiosyncrasy, or according to the direction given by treatment.

It is true that the sequelæ of cholera consist chiefly in congestion of the various viscera; but we must remember that this congestion is with an impoverished, and a poisoned blood. The blood is impoverished, having become deficient in some of its essential salts; it is poisoned, having become surcharged with certain constituents which require elimination, but which, owing to the paralysed and congested condition of the organs by which they are eliminated, have not been eliminated by them since the full development of the disease.

The organs that become affected, and which claim our attention for the diseased action lighted up in them, are, very nearly in the order of their importance, the Brain, the Kidneys, the Stomach, the Colon, the Small Intestines, the Liver, the Lungs, the Buccal cavity, the Eyes, the Skin, and the Reproductive Organs.

The most frequent and the most formidable sequelæ are the affections of the Brain and the Kidneys. It is generally supposed that the cerebral derangements are consequent upon and secondary to the suppression of the urinary secretion. We believe however that the brain and the kidneys suffer primarily and simultaneously in the first instance, and that subsequently they react upon each other. The re-establishment of the renal secretion, which opens out a safety-valve for the elimination of the uræa and other deleterious products of tissue-waste, very often succeeds in relieving the cerebral organs. Hence, it is that after the subsidence of the violent symptoms, the purging, the vomiting, and the collapse, the first thing that is most anxiously and with just concern looked for, is the appearance of the urine. Nevertheless it is not invariably that the restoration of the functions of the kidneys is followed by clearance of the cerebral symptoms which may go on increasing to the extent of culminating in death, in spite of copious emissions of urine. This proves one of the three things, either that the brain has been independently affected, or that its derangements have proceeded so far as not to yield to depurating processes going on in the blood, or that the urine secreted is simply the water exuded from the blood, and does not contain its proper constituents.

Next in order of frequency (under ordinary allopathic treatment) though not the next in point of gravity, are derangements of the Digestive Apparatus. Hiccough, retching, bilious vomiting and diarrhœa, tympanites, even gastritis, enteritis, and dysentery, these are the various forms which these derangements assume. Considering the rapidity with which, the digestive organs, which have been the focus as it were of the disease, resume their normal state and functions, we are strongly inclined to believe that the gastro-enteric derangements which follow the reaction of cholera are chiefly due to the treatment adopted; and we are confirmed in this view by the fact that these derangements are rare occurrences under homœopathic treatment.

We have next to direct our attention to fever of an adynamic type which not unfrequently sets in after reaction, which, in fact is an exaggerated form of reaction, being only an expression of an abnormal excitement of the circulatory system. This fever may be *sui-generis*, or an accompaniment of congestion of the viscera. The latter, however, may be present without there being any fever associated with it, and *vice versa*. Nevertheless in treating this fever, it is necessary to institute a searching examination of all the organs, in order to detect any congestive or inflammatory process that may be going on in them.

Asthenia, though not a very frequent, is nevertheless almost invariably a fatal sequela of cholera. It seems to be a continued imperfect reaction. It is indicative of a most profound depression of the nervous system. The patient, in spite of the food that he takes and apparently digests, not only does not improve, but day by day loses ground, becomes weaker and thinner, till at last he dies as if of inanition. In the course of this, abscesses form in various parts of the body, the corneæ become ulcerated and ultimately slough out. The first sign of asthenia in a cholera patient is a congestive condition of the conjunctivæ associated with want of lustre in the corneæ, the lower margins of which will be found, on close inspection, to have become whitish, and either already invaded by an ulcer or about to be so. In females, in addition to this state of the eyes, there is very often hæmorrhage from the uterus. The parotid glands seem to be the first to suffer from the suppurative process set up in the economy. Bed sores as a rule are formed on the nates. They also form over the scapulæ. In the worst cases these parts become sloughing and even gangrenous. The mucous membrane of the oral cavity becomes red and ulcerated. The gums become spongy and swollen, and blood may ooze out, and even hæmorrhage takes place from them. Cancrum oris is not unfrequently met with, and most specially in cases where calomel has been largely used.

In the treatment of cholera, in all its stages, but specially in the stage of sequelæ, the practitioner should bear in mind one circumstance which has an important bearing upon the disease, and therefore necessarily upon the management of it. This is the probable complication of the disease with the existence of

worms in the intestinal canal. This is a most troublesome, and often, especially in young children, a most dangerous complication. In Bengal this is a most frequent complication too. Of late years helminthiasis has figured largely in the statistics of disease of this country. It would seem that hardly any native of Bengal is free from intestinal parasites. A single dose of santonine would, we are sure, expel at least half a dozen of *Inmbriei* from any one's bowels. We do not know to what particular cause to attribute this. We believe it is due to bad drinking water aided by the immoderate use of sweet meat. It is a notorious fact that water in lower Bengal, whether of tanks or of streams, has sensibly deteriorated. Since the introduction of filtered water helminthiasis has become considerably reduced in Calcutta.

After the above rapid sketch of the sequelæ of cholera, we now proceed to consider their treatment.

As a preliminary to all treatment it is necessary to bear in mind the condition of the blood mentioned before. To enable the vital fluid to supply their proper pabulum to the organs and tissues, its normal composition must be restored, the water and the salts that it has lost must be supplied. The water is easily supplied, and one of the salts, chloride of sodium, may be best supplied with the food now appropriate, namely arrow-root, sago, or barley water. These may be agreeably salted, instead of sugared, or sometimes salted and sometimes sugared. The carbonate of soda may be administered in common bottled soda water (a misnomer for carbonic acid water), which will have the additional effect of soothing the irritated stomach. We have seen the introduction of chloride of sodium to have a charming effect. It seems to restore animation to the whole economy, the organs resuming their functions much more easily and rapidly than they would otherwise do. There is a limit, however, beyond which the chloride of sodium and the carbonate of soda will not be tolerated, and it is necessary to closely watch this, that they may not be pushed to the extent of producing mischief.

(I).—Treatment of the Urinary and Cerebral Derangements.

Almost all the remedies, that are used successfully against

the full development of the disease, have, as one of their distinctive pathogenetic effects, suppression of the urine. Hence in the most favorable cases their employment is not only followed by improvement of the chief choleraic symptoms, purging and vomiting, but also by the rapid restoration of the renal secretion. This happy result, however, very seldom takes place in the malignant varieties of the disease, and in these cases we have to stimulate the kidneys to action by other remedies than those employed during the full development of the disease. The remedy upon which homœopathic physicians chiefly rely to bring about this desirable end is—

Cantharis: This drug is useful both in suppression and in retention of the urine; and may be depended upon even when uræmic coma, delirium, and convulsions have taken place.

Terebinthina (turpentine) is another drug closely analogous to CANTHARIS in its action upon the genito-urinary apparatus and may be had recourse to with benefit when the latter has failed to act upon the kidneys.

Spiritus ætheris nitrici is the drug upon which allopathic physicians chiefly rely in suppression of urine in cholera. Though not so frequently successful as the remedies mentioned above, it has sometimes succeeded in cases where the latter had failed, and therefore should not be forgotten by the homœopathic physicians. It need not be exhibited in large doses ordinarily employed. Five drops every 10 to 15 minutes would be quite enough.

If the urine is not secreted under the action of these remedies, or if in spite of the secretion of the urine, the cerebral symptoms do not improve, then we must have recourse to other remedies which have more direct influence upon the brain. *Belladonna*, *Hyoscyamus*, *Stramonium*, *Opium*, *Cannabis*, and "*Cicuta*" *virens*, are the drugs chiefly relied upon. The differential indications of these drugs may be gathered from their pathogeneses. *Belladonna*, *hyoscyamus*, and *stramonium* are close analogues one of the others, nevertheless there are shades of difference in their physiological actions which point to them as remedies in distinct conditions. We employ—

Belladonna, when the condition of the brain is that of active congestion,—when the cerebral derangements are due

not simply to irritation of nerve-centres; but to determination of blood to the nerve-centres; when there are blood-shot eyes, fulness and throbbing of the temporal arteries, flushed face, &c.

Hyoscyamus, when the cerebral derangements are mere perverted function dependent upon simple irritation of nerve-tissue without any hyperæmia of the parts.

Stramonium, when the delirium is of the maniacal description, characterized by furor and a great tendency to bite. *Stramonium* seems to stand midway between *Belladonna* and *Hyoscyamus* in causing determination to the encephalic centres, but above all in producing irritation of nerve-substance.

Opium is best indicated where there is great depression of the cerebral centres, more coma than delirium, and when there appears to be absolute insensibility to the action of medicines.

Of **Cannabis Indica** we have no pathogenesis in the *Materia Medica Pura*. We have employed it with success in cases characterized by a comatose condition, mild delirium, and involuntary itching of the body, especially of the genitals—a peculiarity we have invariably found in hemp-smokers of this country. If ever that peculiar condition, known as catalepsy, be developed; *Cannabis Indica* would be the best remedy for it.

Cicuta virosa is very useful in cases characterized by sopor, convulsions, and staring or up-turned eyes. We should have said before that *Cicuta* is also useful in the stage of full development of the disease, of the spasmodic variety, especially when the pectoral muscles are the seat of the spasms, so as seriously to compromise the respiratory function. *Cicuta* would be particularly useful when worms are the cause of the nervous symptoms.

(II.) Treatment of the gastro-enteric derangements.

Hiccough is one of the most troublesome of the gastric derangements; but fortunately we have in the homœopathic materia medica a host of remedies which cover this symptom. We can indicate only a few of the most prominent of these—to give the indications of all would require more space than we can afford to spare.

Belladonna, for repeated attacks of violent hiccough; for hiccough which causes the patient to start up from bed, and makes him deaf till the next paroxysm; for nightly hiccough with sweat; and for hiccough that is followed by convulsions.

of the head and limbs, which again by nausea and lassitude.

Cicuta, for sounding, clangous hiccough.

Hyoscyamus, for hiccough with spasms and rumbling in the abdomen, or with involuntary micturition and foam at the mouth.

Carbo veg., for hiccough during every motion.

Agnus, for hiccough with ill humour.

Pulsatilla, for hiccough with suffocative paroxysms, for hiccough during sleep, or after drinking or when smoking.

Staphysagria, for frequent hiccough attended with nausea and stupefaction.

Phosphorus, for hiccough after eating, so violent that the pit of the stomach feels sore and aching.

Ignatia, for hiccough after eating or drinking.

Sulphur, for hiccough with pain behind the palate.

Besides the above we must particularly consult *Aconite*, *Arsenic*, *Bryonia*, *Cuprum*, *Lachesis*, *Nux vom.*, *Veratrum*, and *Zincum*. Cases will turn up which will prove so obstinate as to resist even the most nicely-selected remedy. Under these circumstances we must not forget the application of mustard plasters to the epigastrium, the exhibition of chloroform in doses of 5 drops every 15 to 30 minutes, and even the hypodermic injection of morphia. It will so happen that when the homœopathic remedies taken by the mouth fail, they will succeed when introduced into the system by the hypodermic syringe.

If in spite of the above measures the hiccough continues, we may be almost sure that it depends upon the presence of worms in the stomach. If the patient's strength would permit we should try to expel them, and the best means of doing this would be to encourage vomiting by draughts of tepid water slightly salted. If this cannot be done we should try *Cina*, lime-water with milk, or even santonine.

NAUSEA AND VOMITING are another set of troublesome affections. They are the expression of an abnormal irritability of the stomach depending, in the great majority of cases, upon an excessive secretion of its own juice, as well as upon the regurgitation of the hepatic secretion into it. Hence the matters vomited in this stage are acid and bilious. In such cases *Ipecacuanha* and *Nux vomica* are quite competent to effect a cure. *Ipecac.* is pre-

ferable when nausea simply prevails, *nux* when along with nausea there is vomiting. *Ipecac.* failing may be followed by *nux*, and *vice versa*. When both these remedies fail *podophyllum* is likely to be of service. When vomiting has this peculiar characteristic that it takes place immediately after each draught of cold water, *Eupatorium* is the remedy. When the water drunk is thrown up after it has lain some time, so as to become warm, in the stomach, we should try *Phosphorus*.

If notwithstanding the exhibition of the previous remedies, the vomiting continues to be distressing, we should not hesitate to try *Carbonate of soda* with soda water, which will have the double effect of neutralizing the excessive acid secreted in the stomach, as well as of soothing its irritated nerves. In very bad cases *Hydrocyanic acid* should be thought of. The exhibition of chloroform internally, and counter-irritation with it externally over the epigastrium, are often, in very intractable cases, attended with benefit. We believe both hydrocyanic acid and chloroform act on the homœopathic principle, though as yet we are not in possession of their full length pathogenesis to enable us to select them as we do other attested homœopathic remedies. But on whatever principle they may act, this is certain that they act beneficially in the conditions for which we have recommended their use, and the interests of our patients require that we should not neglect them.

When the vomiting is the expression of an inflammatory or sub-inflammatory condition of the stomach we should treat it as such.

DIARRHŒA, after reaction has fairly set in, very seldom leads to fatal consequences. A slight diarrhœa is, in our opinion, beneficial until the functions of the kidneys are established; we must not, therefore, be too officious to check any diarrhœa that might be lingering on after the violence of the disease has subsided, so long as no urine is secreted, the intestinal discharges being not unfrequently vicarious of the renal secretion.

We must, however, attend to the diarrhœa if it continues after the establishment of the urinary secretion, or even before that, if it is found to be exhausting, exercising a depressing influence upon the pulse. In the latter case a return to the use of the remedies that were employed during the full development of the

disease is likely to be attended with benefit, the dilutions used being higher. Should this fail we should at once address our remedial agents chiefly to the kidneys and we shall find to our astonishment that the urine has been secreted, at the same time that the diarrhoea has been checked.

For the diarrhoea that continues after the restoration of the renal secretion, the best remedies are *Phosphoric Acid*, *China*, *Ferrum* and *Podophyllum*. We use the last-named drug when the discharges indicate an excessive secretion of bile, that is, great irritability of the liver. For Phosphoric Acid, China, and Ferrum no particular indication can be given. Failing with one we use either of the others. We always begin with Phosphoric Acid. It is very seldom that the above remedies disappoint us, but should they do so, we should not hesitate to use massive doses of the so-called astringents such as Gallic Acid, Tannic Acid, Acetate of lead, Chalk, and even Opium.

TYMPANITES is most distressing, and if unchecked may, by interfering with the play of the diaphragm, prove a most dangerous complaint. Tympanites is distension of a portion, or of the whole, of the alimentary canal with gas. The generation of gas in the canal is due to decomposition of its contents, favored by either defective or morbid secretion, and want of tonicity of its muscular coats; or gas may be secreted by the walls of the canal. The treatment of tympanites will, therefore, consist in causing the re-establishment of the secretions that are altogether wanting or defective and correcting those that are morbid, in imparting tone to the canal, and if need be, in causing evacuation of its offending contents.

The remedies that have been found useful in the affection, especially as a sequela of cholera, are *Nux vom.*, *Mercurius*, *Sulphur*, *Carbo veg.*, and *Lycopodium*. We prescribe—

Nux vom. generally when the distension is due more to torpor of the bowels than to any defect or morbid character of their secretion. It is particularly useful when the distension is chiefly in the stomach, also when there is defective inpouring of the hepatic secretion into the intestines from torpor of the gall-bladder and of the biliary ducts, in other words, when there is *biliary congestion*.

Mercurius when the distension is due to defective secretion

from the liver, and when along with this there is factor in the mouth.

Sulphur when there is defective secretion of the whole alimentary tube, depending upon venous congestion of its mucous membrane. Sulphur is especially useful where *Mercurius* has failed, or where much mercury has been used in the treatment of the disease.

Carbo vegetabilis when we have to correct morbid secretion. "It is most suitable for cases where the gas is generated by the walls of the viscera rather than from fermentation of the ingesta; where it distends the stomach rather than the intestines; and where the tendency is to diarrhoea rather than to constipation." —(Hughes.)

Lycopodium: This drug vies with Carbo in its power to correct foul secretions. It is particularly applicable when the distension is in the intestines and when there is constipation.

Failing with the above remedies we may think of *China*, *Asafetida*, *Capsicum*, and *Camphor* in dilutions, say 3x.

Sometimes an enema of warm soap-water with a few drops of turpentine, or soap-water with a few drops or two of Tincture of asafetida, with or without castor oil, affords remarkable relief by evacuating the contents of the lower bowels, and should not therefore be neglected. Enemas, however, should never be used in cases of extreme prostration, because then they are retained, the bowels having no power to re-act upon them, and thus add to the mischief already existing.

The application of cold wet-sheet over the abdomen greatly assists in reducing the tympanites, probably by condensing the gases within, and perhaps also by acting upon the nerves of the intestines, through the cutaneous nerves of the abdomen.

Acidulated drinks are both agreeable and useful. We prefer lime-juice to other acids. In tympanitic conditions sugar is best avoided. Toast water probably for the charcoal it contains is useful. Brandy may be allowed.

The inflammatory conditions of the various tracts of the digestive tube are attended with more or less fever, and are therefore best considered under the treatment of the fever.

(III.)—TREATMENT OF THE FEVER.

When this fever is simply an exaggerated form of reaction,

due either to the free use of stimulants during collapse, or the inherent sensibility of the organism, we may expect it to subside of itself. If it would not, a dose or two of Aconite would help it to do so. It is not always, however, that we have this favorable termination of the febrile movement that sets in after reaction. Generally we have to contend against a most obstinate, low form of fever, very little differing from the genuine typhus or typhoid.

The fever that succeeds reaction is generally in association with congestion or even inflammation of some one or other of the important viscera. It is absolutely necessary, therefore, to arrive at a correct diagnosis, in order to successfully combat the disease.

If it is the Brain that is affected, we shall generally succeed with *Belladonna*; if the Lungs, with *Bryonia* and *Phosphorus*; if the Stomach, with *Arsenic*, *Nux vom.*, *Bryonia*; if the Small Intestines, with *Mercurius sol.*, *Bryonia*; if the Liver, with *Merc.*, *Bryonia*, *Nux v.*; if the Colon, that is, if we have Dysentery, with *Mercurius corrosivus*, *Nux vom.*, *Ipecacuanha*, *Cardo veg.*; if the Urinary Apparatus, with *Cantharis*. In all cases, when the febrile excitement runs high, we premise the treatment with *Aconitum*.

When the fever is uncomplicated *Rhus tox* and *Phosphoric acid* are the principal remedies. *Phosphoric acid* and *Rhus* are also very good for cerebral and pulmonary complications.

The application of cold water by the wet-sheet to the head, the chest, and the abdomen greatly tends to the subdual of the inflammatory condition of the organs which they enclose. The application of cold water to the head is already in vogue, and in fact, in the eyes of my countrymen, distinguishes European treatment from that pursued by indigenous practitioners, the Kavirajs and Hakims. But the application of cold water to the abdomen and chest for inflammation of their enclosed organs has not yet been recommended. On the contrary, the application of the cold-sheet to the chest for pneumonia, &c., is still looked upon with horror, just as the Kavirajs still look upon the application of cold to the head in inflammations of the brain and meninges. We can speak from personal

experience of the great benefit and the immense relief afforded by these local applications.

(IV.) TREATMENT OF THE ASTHENIA.

The Asthenia that we have described above as constituting a sequela of cholera is the most formidable condition of the system that we have to contend against. It is the most to be dreaded inasmuch as it indicates such an utter prostration as to baffle all sorts of treatment, and all our remedial agents. The very fountains of life seem as if dried up. Medicines do not act, simply because there is not vitality enough in the organism to react upon them. Nevertheless such cases are not to be neglected and given up as absolutely hopeless.

The best remedy that we know of, in this condition, is *China*. It is singular that when we were ignorant of the Hahnemannian system, we used to derive the greatest benefit from Quinine. And we now find that when *China* fails Quinine succeeds, and *vice versa*. *Phosphoric acid*, *Carbo veg.*, and *Rhus tox.* would deserve a trial when *China* fails. *Arsenic* (high dilutions) and *Moschus* should be thought of, when nothing succeeds, and when the fear of death is great.

When suppurations take place *Hepar sulph.* and *Silicea* are the remedies that do great service. *Silicea* seems to be especially useful after the abscesses have burst or have been opened. In inflammation and suppuration of the parotid glands, *Lachesis* is the remedy. *Belladonna* and *Rhus* deserve a trial just at the commencement of the swelling. When after the use of *Lachesis* the discharge still continues, *Silicea* should be used. *Mercurius*, unless massive doses of mercurial preparations have been previously used, would also be an appropriate remedy.

When the bed-sores become gangrenous, *Lachesis*, *Arsenic*, and *Carbo veg.* should be employed according to their indications. The best local application is Arnica or Calendula lotion or ointment. If there be much foetor Carbolic Acid would form a good dressing, with water, or better with glycerine or sweet-oil. Charcoal poultices are also of use.

For ulcerations of the mouth the best remedy is *Nitric Acid*. When there is much bleeding from the gums and when it resists the action of *Nitric acid*, *Carbo veg.* and *Hepar sulph.* should be thought of. Arnica gargle would be highly useful. When

the bleeding is profuse and would not be checked, by the above means, local application of Tannic Acid, Turpentine, or the Tincture of Steel should be had recourse to.

For canerum oris, the best remedies we have found are *Aurum*, *Silicea*, *Hepar sulph.*, *Sulphur*, *Quinine*, and *Tincture of Muriate of Iron*.

When the eyes become congested and the corneæ ulcerated, *Pulsatilla* has appeared to us to be the best remedy. We should not forget that this condition is but the expression of the general asthenia and can only be corrected by remedies addressed to the whole constitution. We should not, therefore, in obedience to the ignorant demands of the friends of our patients, put any irritating lotions or drops into the eyes. Much mischief, and never any good, is done in this way.

REVIEW.

Memorial de Therapeutique Homœopathique, per Drs. P. Jousset et Marc Jousset. Paris, J. B. Bailliere et Fils. 1903.

It is a small, neatly got up handy book in French, which may be useful to the inhabitants of the French possessions in India and also to those who can understand the language. The diseases have been arranged in alphabetical order, and thus the difficulty to find them out has been avoided. Attempt has been made to impart a practical character to the book by suggesting dilutions, triturations or mother tinctures which have proved beneficial in the treatment of particular diseases. Within the small compass of 356 pages almost all the diseases have been noticed. In fact it is an excellent epitome. Its use is being limited by the French language, which is little studied in this country.

Diseases of the Urinary Organs including Diabetes Mellitus and Insipidus. By Clifford Mitchell A.B., M.D., Philadelphia, Boericke and Tafel.

The book is meant to be useful to the busy homœopathic practitioners. According to the view of the author they are expected to be "specialist in every thing," and to them the volume is dedicated. It is well if the view of the author can be realised. It is difficult for a general practitioner to have a comprehensive view of all specialities in medicine. The indication of urinary diseases with reference to other derangements is ill understood. Consequently, their treatment will, generally, remain in the dark, unless there be more light on the pathological conditions of the urinary diseases from physiology, than we at present possess. The desirability of such a book from the new school cannot be doubted. The author as a specialist has tried to elucidate the many diseases from the pathological point of view. Their treatment has been given as much as he could. In acute and chronic uræmia he has only mentioned the names of medicines. In the next edition, perhaps, we can expect a detailed indication of those drugs where the diseases do not originate from obstruction.

The various kinds of acute and chronic nephritis have received a careful attention. The treatment of nephritis of pregnancy, important as it is, has deserved a separate notice. The author deserves credit for inserting a table containing the differential diagnosis in renal tumours.

Of all the diseases of the urinary organs, renal calculus occurs most frequently in this country. The notable medicines have found their place in the therapeutic application. We would have been happy if Bell., Puls., and a few other medicines could find a few words. Cystitis, as a result of gonorrhœa when injection has been used, has received scanty attention, though the medicinal treatment is equally applicable to all of them. The chief aim of all practitioners is to check it at the commencement though the attempt fails for some reason or other. Gonorrhœal urethritis has been mostly avoided on account of the magnitude of the subject. A detailed addition would, certainly, have increased the value of the book. It is a common disease and therefore an extraordinary consideration is necessary to achieve the desired result. Diabetes and albuminuria have occupied large attention for the complexity of the two diseases. On the whole it must be said the book is a good production of a specialist and useful to the general practitioners who are expected to derive benefit from a close study of the book.

EDITOR'S NOTES.

Foreign Bodies in the Stomach.

Fredenwald and Rosenthal (*New York Med. Jour.*, July 18th, 1903) report on 90 cases of gastrotomy for the removal of foreign bodies in the stomach. Most of the bodies were swallowed in fits of insanity; others as a means of livelihood. They consisted of nuts, safety pins, hat pins, wire, lead, sword blades, button hooks, forks, knives, false teeth, and hair. In three cases a stomach tube was broken and had to be removed by operation and in one case a Murphy's button. The length of time during which the bodies remained in the stomach varies from a few hours to several years. The symptoms are not distinctive and consist of pain in the epigastrium and between the shoulders, anorexia, vomiting and emaciation. Diagnosis is made by the x rays. Prognosis is good in early cases, but in long-standing cases there may be atrophy of the mucous membrane and thinning of the muscular wall or perforation. During antiseptic times 71 cases were operated on. Early operations 28, 26, recoveries, and 2 deaths. Late operations 29, 25 recoveries, and 4 deaths. Time unknown, 14 cases with one death and 13 recoveries.—*Brit. Med. Journ.*, January 9, 1904.

Wound of the Thoracic Duct.

FAURE (*Bull. et Mem. de la soc. de Chir.*, No. 33, 1903) reports a case of accidental wounding of the thoracic duct in the course of an extensive operation for the removal of a malignant growth from the anterior mediastinum, and of secondarily affected glands in the neck. The opening, which was a small one, was closed by a lateral suture. The patient made a good recovery, but the complete healing of the large wound in the neck was retarded by extravasation of lymph and by the formation of a small lymphatic fistula, which closed at the end of ten days. This case the author points out, shows that wounding of the thoracic duct is not very serious. The researches of Ferrier on animals prove that although the discharge of lymph from a wound in the thoracic duct is usually very profuse, there is always a tendency to spontaneous closure of the fistula. That the same tendency occurs also in man is indicated by Faure's report, and also by a case referred to in the discussion by Recard, who wounded the duct whilst extirpating a tumour of the thyroid body. This accident was followed by a very abundant discharge of lymph, which ceased in the course of a few days after firm compression of the wound in the neck.—*Brit. Med. Journ.*, Nov. 28, 1903.

Comparative Value of Dry and Moist Dressings.

GOUTERMANN (*Arch. f. klin. Chir.*, Bd. lxx, Heft 2, 1903) carried out investigations on the comparison of moist and dry methods of dressing wounds. Daily cultures were taken from wounds, sown in gelatine, and the colonies counted the next day. The dressings used were dry antiseptic gauze, iodoform gauze, moist sublimate gauze (1 in 2,000), and carbolic, 3 per cent. The organism found was usually the staphylococcus albus. The author concludes as follows : (1) No continued bactericidal after-effect of antiseptics with which wounds have been washed can be sown : (2) the number of micro-organisms in nonsuppurating accidental wounds is increased to a greater degree by the use of impervious moist dressings than by dry dressings ; (3) iodoform gauze is to be preferred in the dressing of accidental wounds because, besides its drainage properties and haemostasis, it has a decided inhibitive action on bacteria ; (4) moist dressings readily induce eczema and folliculitis near the wound owing to maceration of the skin ; (5) moist dressings form no certain preventive of suppurations in accidental wounds ; (6) in suppurating wounds dry dressings bring about a more rapid disappearance of bacteria than moist ones ; (7) many accidental wounds heal without the least clinical sign of inflammation, in spite of the presence of large numbers of bacteria.—*Brit. Med. Journ.*, Dec. 12, 1903.

Radium in the Bath Waters.

At a meeting of the Bath City Council on January 5th Councillor Cotterell recalled the fact that for some considerable time Professor Dewar had, at the expense of the Royal Society and with the concurrence of the Baths Committee, collected the gases that rise from the largest of their mineral springs, that of the King's Bath. An analysis of these gases revealed the presence of helium. Some weeks ago a quantity of the iron deposit collected in the tanks and pipes of the New Royal Spring was obtained and sent to the Hon. R. Strutt, son of Lord Rayleigh, who made a careful investigation of the material. That gentleman reported that he had found that the deposit contained radium in appreciable quantities, though not enough to make extraction profitable. He thought there could be little doubt that the helium of Bath owed its origin to large quantities of radium at great depth below the earth's surface. A little of this radium was carried up by the rush of hot water and was found in the deposit. He added that his experiments promised further interesting developments which

would be brought to the notice of the Committee in due course. In reply to an inquiry by Mr. Cotterell, Mr. Strutt explained that by appreciable quantities of radium he meant quantities such that its presence might pretty easily be detected. But the amount of radium in the deposit was very much less than that in the ores at present used. The Council agreed to give Mr. Strutt every further facility for continuing his researches.—*Brit. Med. Journ.*, January 9, 1904.

Active Immunization by Means of Attenuated Plague Culture.

Kolle and Otto (*Deut. med. Woch.*, July 9th, 1903) find that of the four methods of immunizing against plague Haffkine's method must be regarded as by no means ideal, as even in the animal experiments only a comparatively small protection is obtained. The same may be said of the serum of the German Plague Commission, which is certainly not so strong as the first mentioned, although it is more potent than Lustig's serum. The fourth, that of Terni-Bandi, is practically inert. They therefore sought to improve on these immunization sera, and based their experiments on observations which they had made when dealing with an old culture of plague bacilli. Guinea-pigs which received injections of this culture got bubos, which began to decrease in size after about eight or nine days. The general condition of the guinea-pigs was not materially affected, and after the lapse of two, three, and eight months the animals, 18 in number, were found to be immune toward plague injection. They have succeeded lately in attenuating another culture artificially so far that no illness was produced by cutaneous infection, while even by subcutaneous and intraperitoneal infection of a half of a loop of an agar culture only some of the guinea-pigs died of chronic plague while the others recovered. Eventually they further weakened the culture, and three loops proved non-pathogenic, that is more than 3,000 times the lethal dose of a virulent culture. By means of this culture they have immunized guinea-pigs, rats, and mice with certainty completely. They intend continuing their researches in this direction in order to determine the length of time that the immunity will last and what doses it should be given in.—*Brit. Med. Journ.*, November 28, 1903.

The Cow as an Ivory Producer.

NAPKIN rings, hair combs, walking-stick knobs, brush backs and handles, cigarette cases and holders, and a variety of other small

objects are now being made of milk. It appears that much of the cheap imitation Ivory now in the trade comes from the cow. There are even alleged pearls worn in earrings, or in other kinds of so-called fancy jewelry, which are literally drops of condensed milk. A nobleman owning immense estates and large farms in the Loiret Department has set up a factory for carrying on this new industry. His cows produce some 200 gallons of milk a day, two-thirds of which is sent to Paris in the season. But in summer the demand falls off, while the cows continue to yield the usual quantity. Hence, the ingenious nobleman's new departure. The caseine obtained from the milk is converted, under great pressure, into a ductile substance called "lactite" the possible uses of which seem to be unlimited. It is this sub-product of milk which is replacing celluloid in the market as imitation ivory. Moreover, lactite can be employed, it appears, in coloring processes for textiles, and for the treatment of wines, notably for the operation called "collage." Cabinet-makers also use it for veneering furniture, and potters manufacture with it imitation earthen ware. Glove makers have just successfully experimented with lactite for producing the glaze surface on kid. Tire manufacturers have hopes of employing it instead of gutta-percha. An American inventor affirms that a powder can be extracted therefrom which is just as good as snuff, and a great deal better; but the French nobleman in question has not yet gone in for that particular branch of the new industry on his Loiret estates.—Paris Correspondent, London Telegraph.—*Scientific American Supplement*, Oct. 17, 1903.

Argon in Atmospheric Air.

An interesting communication was made recently to the Paris Academy of Science on the above subject. M. Moissan reported that he had followed up the researches of M. Schloesing who had already determined the proportion of argon existing in certain specimens of air. By utilising the property which calcium possesses of absorbing at one and the same time the oxygen, the nitrogen, and all the impurities which are found in atmospheric air, and by the use of a special apparatus of which he had already given a description to the Academy, M. Moissan had been able to estimate the amount of argon found in the air of Paris, of London, of Berlin, of Vienna, of St. Petersburg, and of Athens. In all these towns the amount was identical. The same proportion of argon was also found in samples of air taken in the Channel, in the Ionian Sea, in the Gulf of Naples, in the valley of Chamounix, at the Grands Mulets, and at the top of

Mont Blanc. Air collected in the middle of the Atlantic appeared to be slightly richer in argon than that from other places. Calcium will combine with the hydrogen which is produced during reactions, forming a hydride which is not decomposed at a temperature of 500°C . All this illustrates the remarkable uniformity of the composition of the air. M. Moissan does not appear to refer to the question of small quantities of helium which may possibly occur in the air or as to what its behaviour would be when exposed to hot calcium. The results as regards argon are of interest and the observation that the air collected in the middle of the Atlantic appeared to contain a slightly greater proportion of argon than that from other places is probably in some way connected with its solubility in water and the great and frequent variations of atmospheric pressure to which the Atlantic ocean is liable. — *Lancet*, December 19, 1903.

The Secret of Longevity.

According to Sir James Sawyer, the secret of longevity consists in "paying attention to a number of small details." Among these are the following: (1) Eight hour's sleep; (2) sleep on the right side; (3) keep the bedroom window open all night; (4) have a mat to the bedroom door; (5) do not have the bedstead against the wall; (6) no cold tub in the morning, but a bath at the temperature of the body; (7) exercise before breakfast; (8) eat little meat, and see that it is well cooked; (9) (for adults) drink no milk; (10) eat plenty of fat, to feed the cells which destroy disease germs; (11) avoid intoxicants, which destroy those cells; (12) daily exercise in the open air; (13) allow no pet animals in living room—they are apt to carry about disease germs; (14) live in the country if possible; (15) watch the three D's—drinking water, damp, and drains; (16) change of occupation; (17) take frequent and short holidays; (18) limit your ambition; and (19) keep your temper. Abraham Lincoln's maxims were: "Do not worry; eat three square meals a day; say your prayers; think of your wife; be courteous to your creditors; keep your digestion good; steer clear of the billiousness; exercise; go slow and easy. May be there are other things that your special case requires to make you happy, but, my friend, these, I reckon, will give you a good life." Sir Benjamin Ward Richardson said: "The would be centenarian should never smoke nor drink—especially the latter, and he should eat very little meat. He should keep early hours and work as little as possible by artificial light. Moreover, he should not make haste to be rich, and he should avoid worry and consuming ambition." — *Brit. Med. Journ.*, December 5, 1904.

• A Pioneer Medical Woman. •

Dr Amelia Wilkes Lines, said by the *Medical News* of New York to be the oldest female practitioner of medicine in the United States, recently celebrated her eightieth birth-day at her residence in Brooklyn. She presided all the afternoon at a reception, at which were present four generations of her descendants and about 200^o old friends, patients, their children and grandchildren. Mrs. Lines was born in the Isle of Wight on November 21st, 1823, on the country estate of her father, Sir William Wilkes. She was one of thirteen children, and she centred her affection on her oldest brother, William, who entered the navy as a surgeon when she was still a child. When she was about twelve years old, Mrs. Lines came to America to visit some relatives of her father in Painsville, Ohio. On the death of her father she took up her residence in America. When she was 16 years old her favourite brother died and was buried at sea. When the division of his property was made she asked only for his medical library, instruments, and diplomas. After returning to the United States she devoted much of her time to reading the books, and in this way she became interested in medicine. In 1842 she married Dr. T. T. Lines, and two years later they went to New York. Mrs. Lines continued her independent study of medicine, and worked much with her husband. In 1850 it was suggested that she should attend a medical college. The bare suggestion of such a thing astounded the President and Faculty of the National College of Amsterdam, which has since passed out of existence. However, as Mrs. Lines was young and pretty, and the wife of a well-known physician, she was finally admitted to the classes. In 1853 she obtained a licence to practise in the State of New York, the first granted to a woman in that state.—*Brit. Med. Journ.*, December 26, 1903.

• The Diagnosis of Conception. •

A MONOGRAPH of great practical importance was recently read before the Belgian Gynaecological and Obstetrical Society by Dr. Keiffer. He considers that what he calls the pregravidic signs of conception may possibly be defined, and his clinical evidence is of much value in relation to tubal pregnancy. When once the fertilized ovum is in the uterus—that is to say, when uterine gestation has commenced, diagnosis is not easy for several weeks. Von Braun and Piskacek claim to have detected pregnancy in the first week, by noting a more or less longitudinal groove either in the back or front of the uterus. Dirner, of Buda-Pesth, claims to have diagnosed pregnancy very

early, if not so soon as the first week, by von Braun's sign. Obstetricians would like to hear of yet wider experience of this method of diagnosis. Hegar's sign, the detection of a soft tract, on bimanual palpation between the cervix and the body, is not available till the sixth week. Keiffer believes that there may be definite signs associated with the rupture of a Graafian follicle, and with the passage of the impregnated ovum along the tubal canal. He fancies that sensations of slight pelvic discomfort accompany these phenomena, but are not as a rule severe enough to lead the subject to seek medical advice; occasionally they are severe but an incorrect diagnosis of a pathological condition is made. Keiffer reports three cases in which sudden pelvic pain and very distinct swelling of one or both ovaries occurred. The Fallopian tubes in two instances could be detected swollen, in one patient uterine haemorrhage with spasmodic pain was noted, and in another there had been inflammation of the appendages which had subsided, but was supposed to have recurred. In all three patients perfectly normal pregnancy followed the attack of pain and ovarian swelling. Keiffer observes that the ovary is much enlarged when the follicle due at the period is ripe; indeed this enlargement has often been observed in the course of an ovariectomy. Possibly the sharp pain signifies muscular contraction of the tube when it receives the ovum and they may perhaps be sharper when that ovum happens to be impregnated. Haemorrhage is also a tubal sign and may explain some of the false periods which mislead women in reckoning their own pregnancies. Keiffer warns the physician and obstetrician against the prescription of hot douches and other local therapeutic methods for sudden attacks of pelvic pain and ovarian swelling. For these symptoms may mean pregnancy and may not the enormous number of tubal pregnancies reported during the last twenty years be in part attributed to too hasty "uterine therapeutic measures" for a condition purely physiological? Is it not quite reasonable to suppose that the local disturbance caused by the douche may cause the "oosperm" to be arrested in the tube, so that a normal is converted into a tubal pregnancy?—*Brit. Med. Journ.*, Dec. 12, 1903.

The Life-History of the Organism of Small-pox.

GARY N. CALKINS delivered a lecture on this subject at a meeting of the Biological section of the New York Academy of Sciences on November 9th, 1903 (*Medical Record*, November 14 1903). He said that Councilman had pointed out that the organisms found in vaccinia were limited to the cell bodies of the Malpighian layer of the skin, whereas in small-pox they were found both in the cell bodies and the cell nuclei. He also showed that the inclusions were protozoa. The lecturer said that in the parasitic diseases due to the protozoa there was usually some phase of the disease which corresponded with some phase in the asexual development of the parasite. The ordinary asexual development of the organisms took place in the cell bodies of the Malpighian layer of the skin, while the more important sexual

reproductive processes occurred in the nuclei of those cells. Calkins had been fortunate enough to be selected by Councilman to work out the life-history of the organism of small-pox, and through the courtesy and liberality of the same gentleman he was permitted to present those results at this time. Most of the work had been done in connexion with the epidemic of small-pox in Boston. His own work had been done mainly upon 22 cases, representing nearly every variety of small-pox. It was below the pustule that one found the organism of small-pox. This organism was a minute, homogeneous body situated in the cell protoplasm. Calkins described in detail the various phases of the life-history of this organism, the *Cytorytes variolae* Guar, by the aid of a series of lantern slides, many of them photographs from actual specimens. He pointed out that in vaccinia only gemmules formed, the remainder of the process of development being for some reason, inhibited. In the late vesicle stage of true small-pox there was found a most characteristic process of reproduction, an auto-infection, that is, the formation of the pan-sporoblast. As long ago as 1896, while making some cultures from the protozoa of another class, Calkins had noticed that the nucleus of these forms was invested in many cases by a peculiar body, at the time unknown to him. The specimen was labelled "A parasite in the Nucleus," and was not thought of again until he became acquainted with Councilman's specimen in the spring of 1903. The specimen was then looked up, and found to be apparently identical with the small-pox germ. Although there was about one chance in several millions that this specimen represented the exogenous phase of the small-pox organism, it was thought proper to study it thoroughly, and remove every doubt on this point. Personally, however, he believes it was a similar parasite, but not identical with the small-pox organism. In conclusion, he compared the cycle of malaria, a disease due to a protozoon, with the cycle of small-pox. Brinckerhoff, in discussing this paper, said that he had inoculated twelve apes with this organism, and in each case there had been a development of a lesion; analogous to the vaccinia lesion; indeed, the disease in the monkey was found to be comparable in its clinical course, in the evolution of the lesions, and in the general constitutional reaction with variola inoculata in man. In every case in which a secondary exanthem developed, the lesion was found in that. It had been possible by this mode of experimentation to determine quite accurately the time relation between the various stages of the parasite and the evolution of the lesion, and these findings were perfectly in accord with the results obtained by Calkins on the human lesion. The monkey was subject to both vaccinia and variola, and hence this animal was particularly well suited for the final demonstration of the minute details of the complete life history of the organism of variola.—*Brit. Med. Journ.*, January 2, 1904.

Pregnancy in Double Uterus.

Frankel (*Zentralbl. f. Gynak.*, No. 48, 1903) reports a case, without a clinical history, and pregnancy over term in a closed os,.

chiefly of interest in respect to the relations of the bladder to the abnormal uterus. A fetal sac was found, intraligamentary and in part retroperitoneal and subperitoneal, lying on the left side of a dextroverted uterus. It rose above the level of the fundus as much as it passed below that of the cervix, and was continuous with both by muscular tissue and not by a mere ligamentous band. The left round ligament was attached to the fetal sac, a relation which settled the nature of the anomaly. The bladder lay superiorly in front of the fetal sac, and entirely to the right of the normal cervix. Fraenkel reckoned the abnormality as coming under uterous bicornis bicollis as the sac was continuous with the cervix as well as with the body of the right half of the uterus. The position of the bladder was not in accordance with prevalent experience so that Fraenkel, after a discussion on this case, admitted that the displacement of that organ to the left was probably due to a secondary and pathological change in relation to parts teratologically abnormal.—Jurinka (*ibid.*, No. 45) relates a case of much clinical interest where pregnancy occurred in the right half of a uterus bilocularis unicollis, and intense pain was caused by distension of the gravid cornu, although that cornu was in free communication with the os externum and vagina. The patient was a married woman, aged 32. Six years before observation she bore a male child, though in which cornu it developed remained uncertain. Delivery occurred in the eighth month, after strain, but the child was reared and is living still. The last period occurred at the end of October, 1902. Severe shooting pains were felt about Christmas in the right iliac fossa. In January, 1903, Jurinka detected an enlarged uterus, anteфлекed and pushed to the left by an almost spherical, soft, doughy tumour quite continuous with it. The tumour was very tender to touch. The left appendages felt normal; the right tube and ovary could be traced proceeding from the tumour. The vagina and vaginal portion of the cervix were normal; nor could the least trace of a septum be detected in either. Interstitial or tubo-uterine gestation was suspected. On January 19th the uterus and the gravid tumour, or rather cornu, were successfully removed, together with the right ovario, by supravaginal amputation. The gravid and not obstructed right cornu contained a well-developed male fetus $4\frac{1}{2}$ in. long. The septum between the cornu and its fellow was $2\frac{1}{2}$ in. long, and ended at the level of the os internum, there being one cervical canal, ending in a single os externum. The empty left cornu had walls almost uniformly $\frac{3}{4}$ in. thick, but the walls of the left cornu were hardly $\frac{1}{2}$ in. thick near the internal os, whilst near the origin of the right tube the thickness was reduced to about $\frac{1}{8}$ in. Thus the cornu had developed too rapidly to allow of a safe and normal increase in the thickness of the cornual walls. The pain was thus explained; it was very remarkable that no true contractions nor any other symptoms associated with abortion set in, though the tension must have been severe for at least a month. The right round ligament was attached to the outer pole of the gravid cornu and the placenta to the posterior part of its inner wall.—*Brit. Med. Journ.*, December 5, 1903.

Sir A. Cooper, on the Structure and Functions of the Spleen.

The following is an abstract of Sir A. Cooper's opinions on the structure and use of the spleen, which were delivered by him to the anatomical class a few days since, in a lecture upon that viscus.

The most curious part of the structure of the spleen, he observed, was in the veins, and here Sir A. exhibited to the class the spleen of an ox, and also of a calf, in which the distribution and commencement of the veins were well seen. He compared the internal structure of these preparations with a dried preparation of a turtle's lung, and said, that the similarity was so great, that the lung had been then placed upon the table, by mistake, for a preparation of the spleen. The cells of the spleen Sir Astley remarked were formed by the splenic vein, into which the blood is poured from the minute capillary branches of the splenic artery. In order to illustrate the elasticity of the membrane, or proper capsule of the spleen, Sir Astley introduced a pipe into the splenic vein and then inflated the spleen; it readily admitted of distension, and its size was much increased, but, it was immediately emptied by its own elasticity. By means of an injecting syringe, Sir Astley threw water into the veins of a spleen, upon withdrawing the syringe, and holding the viscus in the hand, it was seen to empty itself and resume its original size. The spleen upon which this experiment was shown appeared very small, but it held twenty-four ounces of fluid. "These were my play-things, gentlemen, (said the worthy Baronet, with a good natured smile,) when I was ill in the country last summer, and I will tell you the result of these investigations or rather, the conclusion to which I have arrived respecting, the use of the spleen; and it is this—*The spleen is an elastic reservoir and manufactory of venous blood.*"

Sir A. said the blood was conveyed into cells formed by the splenic vein, and was there retained until a supply of dark blood is demanded for the liver, when, by the elasticity of the investing membrane of the spleen, its contents are propelled. The blood in the splenic veins becomes additionally charged with carbon and forms dark blood, which is necessary to the formation of bile. Sir A. remarked, that the difference between the lungs and spleen, was this,—that in the former the blood was deprived of its carbon, whilst in the latter it received an additional quantity. In spleen of the reptile class, and also in birds, he observed, there were vessels in lieu of cells, and it is only in quadrupeds that the cells can be ascertained.

Sir Astley Cooper next alluded to the hypothesis of Dr. Haighton upon the use of the spleen, which was, that when the stomach was full, it passed upon the spleen, and thus impeding the calculation through that viscus, the blood was more copiously propelled to the arteries of the stomach, in order that a large quantity of gastric juice might be secreted. Sir A. said if such were the use of the spleen to the stomach, it must also serve for a similar purpose to the pancreas; but he admitted, that it remained for further investigation to prove, what other offices the spleen performed, in addition to that which he conceived to be its principal use.—*The Lancet*, December 26, 1903

CLINICAL RECORD.

Foreign.

A CASE OF ASCITES RAPIDLY CURED ON THE
ADMINISTRATION OF IODIDE OF POTASSIUM.BY JOSEPH A. W. PEREIRA, M. D., BRUX., L.R.C.P., LOND.,
M. R. C. S., ENG.,

MEDICAL OFFICER, EXETER CITY WORKHOUSE.

A man 25 years of age, was admitted into the Exeter City Workhouse Infirmary on Dec. 28th, 1901. His condition was as follows: The abdomen was distended with fluid. The urine was scanty, high coloured, and showed a distinct trace of albumin. The liver did not seem to be enlarged; its edge could not be felt. There was no jaundice. The heart was displaced upwards and its sounds, though feeble, presented no murmur. There was no œdema about the eyelids, the thorax, or the upper or lower extremities. The face was not emaciated, neither was the complexion anæmic. The man was ordered a drachm of compound jalap powder every alternate morning and a mixture of digitalis, squills, and broom was prescribed. He took his discharge on Feb. 25th, the ascites being slightly more pronounced than on his admission. He returned to the infirmary on March 3rd, 1902. His condition was greatly aggravated and, moreover, his lower limbs, his scrotum, and penis were very œdematous.

For a case like this, tapping the abdomen is the recognised treatment. But there were certain noteworthy features in the case. The patient was under the age at which alcoholic cirrhosis is generally seen. He had not the hepatic facies of the tippler. His physical strength too, was remarkable, for he actually walked to the infirmary, a distance of nearly a mile. He presented none of the toxæmic symptoms which one would have expected in ascites of such a grade. The conclusion I came to was that there was pressure on some abdominal vein or veins, possibly the portal, which caused the ascites. All the other signs and symptoms were the natural consequences of the pressure. In a man of his age a gumma was the most probable cause and on this supposition I placed him on $7\frac{1}{2}$ grain doses of iodide of potassium three times a day. The effect of the drug was that of a powerful diuretic. The urine became copious and free from albumin. He took his discharge on April 29th, without a trace of ascites or œdema anywhere. He is at the present moment earning his living as a labourer. I record this case because it is rare for ascites, from whatever cause arising, to disappear completely. It is also the most

remarkable one in my experience of the effect of a single drug on a disease, for this man whose heart was very seriously embarrassed by reason of the great abdominal distension left the infirmary within two months perfectly well. It also presented features which, as I have shown above, differentiated it from alcoholic cirrhosis of the liver in which the iodide of potassium would have been useless.—*Lancet*, January 2, 1904.

HYOSCINE AS A SPECIFIC IN PARALYSIS AGITANS.

By A. ROSE, M.B., C.M. Aberd.

This disease is generally put down in most textbooks as one that the physician can do little for by way of relief or cure. I wish in this communication to show that the symptoms can be much relieved and life prolonged by the alleviation of same.

One does not come across many cases of Parkinson's disease in general practice, and as I have had under my care for over three years a most typical one I should like to give my experience of that most potent drug hyoscine as an alleviative agent, if not a curative one, in that disease.

The patient, a woman, is now 69 years of age. Five years ago she became aware that her writing—usually a good hand—was getting shaky, and her right hand at times tremulous. She did not pay much attention to it until about a year afterwards, when the other hand began to quiver, and both arms became much fatigued on the least exertion. She also developed the subjective sensations of great heat, followed by free perspirations and much restlessness.

I saw her for the first time then; that would be about eighteen months after the tremor was first detected. She had the characteristic "pin-rolling" movements in the fingers and thumbs, along with the constant movements of flexion and extension at the wrist and elbow joints of both arms. She also began to take on the peculiar mask-like expression, and presented the characteristic stooping attitude. In walking she showed a slight tendency to hurry forwards. The muscles of both the arms and right leg showed increased irritability on tapping. The tremor could be stopped by a voluntary effort for a short time, and it ceased during sleep. In the morning, on waking, it was very slight, but became worse towards night or after any exertion.

In the way of treatment I enjoined mental and physical rest, and gave at different times arsenic, Indian hemp, and phosphorus, but none were of much avail; indeed, the tremor increased in violence

and was becoming more widely distributed, and the "festination" was much more noticeable. She also complained of acute neuralgic pains in the arms and chest, and altogether the patient was becoming very irritable, so much so that she "fell out" with almost everything and everybody. The heart also showed signs of failing as was evidenced by the dropsy in the lower extremities and Dyspnoea on the least exertion. There was no albumen in the urine.

While perusing the columns of the *Lancet* about fifteen months ago I saw that Drs. Williamson and Bury, of Manchester, found hyoscine to be the most useful drug that has hitherto been tried in the treatment of paralysis agitans. I procured some in the form of the hydrobromate, and commenced with a dose $\frac{1}{100}$ gr. in aqueous solution morning and evening. The first dose had a most marked effect. The patient slept for ten hours and felt quite refreshed, and remarked that she did not feel so well for at least three years. After four doses the tremor lessened in its violence, and after four days was hardly noticeable. She stated that she felt more comfortable and was not now troubled with the flushings and restlessness which were so persistent before. The neuralgic pains gradually subsided, as well as the dropsy and dyspnoea, and her gait became more natural, although the characteristic posture remained the same.

As I have already stated, it is now fifteen months since I commenced the administration of this most potent alkaloid, and in the interval have given it in varying doses, but never more than $\frac{1}{100}$ gr. at a time. Now my patient is very much better in every way than she was previous to its use, and I feel confident that her life has been made much more pleasant and indeed has been prolonged by the administration of this drug which from my experience I should almost call specific for shaking palsy.

It is important to note that hyoscine is a very powerful drug, and must be administered with great care. It is best to give it well diluted with water. Dr. Williamson's prescription is a useful one— $\frac{1}{8}$ gr. of hyoscine hydrobromate in 6 oz. of chloroform water. At first two teaspoonfuls of this may be given in the morning just after breakfast and at bedtime, and the dose may be increased to even six teaspoonfuls ($\frac{1}{8}$ gr.) but I never had to give in my case more than $\frac{1}{100}$ gr. at one time.—*Brit. Med. Journ.*, December 19, 1903.

ARSENICUM IN CASES OF GASTRIC ULCERATION.

By H. V. Halbert, M. D.

Mrs. C., a married lady thirty years of age, came to my clinic for relief from a troublesome pain and a persistent nausea of twelve years intermittent duration. Of course she had been under other care during all this time and had run the gauntlet to all the city clinics. She had taken medicine enough to ruin a hundred constitutions of unusual resisting power and yet she was no better. I do not say this for the sake of ridicule or unprofessional comparison, but simply to show how many shotgun prescriptions are often thrown into a patient's stomach simply for the sake of prescribing after hours have been given to the study of diagnosis in every given case.

Let us analyze her symptoms and reveal the features of our examination in order to arrive at a diagnosis in her case. In appearance she was considerably anemic, partially from the fact that she had not been able for a long time to partake of sufficient food to sustain the normal hemoglobin of the red cells. Her diet had been in the main a liquid one inasmuch as the stomach would not tolerate any amount of solid food. She had complained, in the beginning, of a boring, burning or gnawing pain in the epigastric region; this was periodic in its aggravations and decidedly localized. Hematemesis and vomiting had been attending symptoms in the early stages. At present, however, the nausea and vomiting were excited by the introduction of food and particularly fluids and "cold things." The pain always extended through to the back and was paroxysmal in character.

At the time of her visit the burning sensation, the vomiting of mucus and food, and the attendant water brash had caused a perfect loathing of food and as a result she was cachectic and poorly nourished. The abdomen was also distended and gases made the intestine irritable. She said the evacuations excoriated the anus and she was troubled with involuntary stools. Alternate constipation and diarrhoea had become an established habit. As a result of the underlying condition the patient had become exceedingly weak and prostrated. The vital powers were truly exhausted and the functional activities were decidedly impaired. She was irritable, restless and bordered upon a state of nervous collapse. An alkali gave much relief to her stomach but acids could not be tolerated.

The physical examination did not manifest many positive signs of the original cause but some tenderness over the epigastrium was still found by palpation. Pressure gave some relief. No in-

duration could be discovered in the vicinity of the pylorus, and her anemia was not sufficient to establish any physical theory of organic development. The tongue was covered with a thick coating though there were visible signs on the margins and at other points of red patches in evidence of a previous red tongue.

It was quite conclusive from these symptoms and the existing clinical findings that the trouble in the beginning was due to hyperchlorhydria. Following this gastric ulceration had no doubt set in, inasmuch as the hyperacidity had established its effects upon an unhealthy gastric mucous membrane. A faulty diet and improper treatment had contributed toward a general gastric ulceration. Fortunately the perforating ulcer had not followed. Nature had to a certain extent cared for the gastric pathology, and following this a chronic gastritis had intervened. We see many of these cases without recognizing the early pathology of gastric ulcer.

Arsenicum alb., in the third decimal potency, was prescribed, and the patient was instructed to report in a week. The first exclamation she made at that time described a wonderful relief. She said that the pain had greatly decreased, she was able to partake of food with less disturbance and the vomiting was decidedly lessened. She was encouraged with the belief that she would get well, inasmuch as she had not had so much relief in a long time. It is unnecessary to enter into any discussion explanatory of this, inasmuch as the symptoms of arsenic were so clearly indicated in her case. It seems, however, to show us conclusively that the efficacy of our remedy is clearly demonstrated when the physiological picture is clearly present.

This patient had been given Fowler's solution and other forms of arsenic long before this, but those preparations invariably made her worse. This is still another incident in confirmation of the fact that crude doses will not always accomplish what we may expect from our milder remedies. It is, therefore, incumbent upon our part to thoroughly follow this procedure, in the treatment of disease, so far as possible. It will teach us more than this that, the present danger of looking for a diagnosis only to prescribe a stereotyped treatment is not sufficient.

Without doubt the cure of this patient was possible during the early stages of the hyperchlorhydria. At that time a careful proteid diet with alkaline drinks and a carefully selected remedy should have cured the disease before gastric ulceration intervened. At the present date we shall continue the remedy until we find that it is not needed or some other remedy may be indicated. The diet

will be sufficiently bland not to irritate the stomach and some proteid will be persistently used to cause a normal naturalization of the acids. The remedy will do the rest. Cases of this kind will respond nicely to lavage, inasmuch as the ulceration, at this time, is not extreme enough to create pain by the introduction of the tube.

INCIPIENT MITRAL INSUFFICIENCY—ARSENATE OF STRYCHNIA.

Mrs. C., age sixty-seven, came to us complaining of dizziness and a shortness of breath after the slightest exertion. She said her "heart felt weak," that "she was weak" and a "fluttering sensation" was experienced in the cardiac region whenever she was exhausted. She also complained of gaseous eructations, indigestion and an obstinate constipation. I repeat her statements inasmuch as they are so typical in the beginning of cardiac affections in elderly people.

The aggravation of her trouble seemed to be dated from an attack of pneumonia about one year previous. Upon making a physical examination the students failed to observe any signs of a mitral lesion and yet it was clearly recognized when their attention was properly directed. The beginning of a forcible impulse was evident to inspection, the apex was displaced directly downward and the thrill was appreciated by palpation. Auscultation defined an accentuated and slightly prolonged first apex sound. This is a characteristic initial feature of mitral insufficiency as it occurs in old people or in those debilitated prematurely.

We meet with many cases like this and we are inclined to ascribe the sense of exhaustion and suffocation to something besides the heart. Then, too, when we make the chest examination we are liable to underestimate the mitral weakness because the blowing sound is not present and there is no transmission toward the axilla. In fact this is a typical representation of the incipient failure of the mitral segments which takes place independent of infection. It is also a common incident illustrative of muscular weakness of the heart which comes on as patients reach the old age period. The leaflets fail to approximate because they have not sufficient muscular force and the auriculo-ventricular opening also yields to the gradual atonicity of the cardiac walls. In such cases as these there is no tendency to compensating hypertrophy and therefore the prognosis is invariably unfavorable though the lesion is not severe.

We gave this old lady arsenate of strychnia in the third decimal potency six times daily. No remedy is better affiliated to the condition of these cases than this. In the first place arsenic is a natural tonic when the cardiac muscle has lost its contracting power and the strychnia is valuable as a stimulant to the involuntary motor nerves which need some irritation to make the heart beat forcibly. Then, too, the strychnia is efficacious in the constipation of old people. It would be a mistake to resort to extreme heart tonics in cases of this kind.—*The Clinique*, October 15th, 1903.

RETROSPECT ON KOUMISS.

By V. JAGIELSKI, M.D., M.R.C.P.

At the present day, when the market is flooded with new preparations of food of various kinds and qualities, and which are largely pushed and advertised by enterprising manufacturers, we are apt to forget other valuable nutrients which were well known and much employed some years ago with the greatest advantage. I have, therefore, thought it would be a good and useful thing to recall to the memory of my senior colleagues, and to bring before the notice of my younger *confrères*, the very valuable properties of koumiss as a nutrient of a high class and extremely easy of digestion, in many forms of disease where the feeding of the patient is the chief difficulty.

I first brought koumiss to the notice of the profession in 1871, at the meeting of the British Medical Association at Plymouth, where I showed specimens of it in different stage of its life. In its preparation the bacteria lactis cause the lacto-fermentation in sour milk which is so important as the primary process in the koumiss preparation, and also as being essential for the development of the secondary vinous or alcoholic fermentation. This fermentation entirely depends on the increased amount of the saccharum lactis in the natural mare's milk, which is an exceptional feature in the Kirghese mares of the steppes in Tartary. To this composition I brought as the very first stage my basis milk, ordinary cow's milk, which I proposed to change into koumiss by the manufacturing process of heat and movement, so that the decomposition of the lactose may enhance the production of the alcoholic fermentation, the result of which is lactic acid, carbonic acid, and alcohol. By this means the casein of the milk goes, so to say, through the first process of its digestion outside the stomach, and when brought on the tongue dissolves in the mouth like snow-flakes.

What induced me first to study the action of koumiss was the serious illness of my wife in 1870, who threatened to follow her sister, who died in Italy of consumption; she resisted the medicinal treatment of several noted physicians in London, and after a course of the waters and baths in Ems she was unable to keep anything on her stomach. Cod-liver oil, revalenta, milk, etc., were all impossibilities, and her prostration and exhaustion had reached a very dangerous state. At that anxious time I happened to remember the frequent conversations I had had with Russian military doctors when I was serving as a medical man in the Prussian army, about the mare's milk koumiss in the steppes of Tartary, and its magic influence in arresting consumption or phthisis pulmonalis. I immediately set to work day and night and produced a koumiss from cow's milk, because I could not get mare's milk anywhere in London in the limited inquiries, which the urgency of the case of my dear patient, my own wife, necessitated. At last I approached her with the first glass of

my own self-made article of koumiss from cow's milk, which I had first brought to the chemical composition of mare's milk. It answered my expectations; the patient kept it down ice-cold as it was, and she fell asleep soon afterwards for several hours, when another wineglassful was given to her, and so on every hour, with a steady improvement in her appetite. After twenty-four hours she took at meal-times nearly a tumblerful of the full koumiss, besides the usual wineglassful every hour. On the third morning the first voluntary evacuation took place, and the temperature, which had been for the last fortnight between 100° and 102° F. went down to 99°, and on the fifth day, after the second motion of the bowels, to normal. The expectoration* had become less copious, thick, and viscid; the wheezing ceased; she could lie down with only one pillow, hitherto having been propped up to a nearly sitting position for six weeks; the traces of blood-spitting disappeared entirely after six days, likewise the horrible colliquative night-sweats. On the seventh day all vomiting and nausea had entirely ceased, the tongue had cleared from that nasty, thick, greyish, yellowy coating, and she was able to begin to eat rice. On the eighth day the evacuations became regular every day, particularly as she got up on that day and commenced to walk about the room. She began her usual diet on the ninth day, partook principally of fowl, vegetables, and grainery. She took the koumiss for two months, when she was restored to complete health and strength. I am filled with gratitude to the Creator for my inspiration, which has saved her valuable life by means of koumiss. This afterwards has always put her right again when she got a cold or bronchitis, or during her two severe attacks of acute rheumatic fever, through which I am thankful to say she was greatly helped by koumiss and homœopathy under the kind and friendly guidance of Dr. Dyce Brown, to whom we both feel greatly and everlastingly indebted for his ever ready, generous, and skilful medical treatment and friendly encouragement in those anxious hours.

It was not surprising that after the recovery of my wife through her koumiss-treatment, I was urged on all sides to make it accessible to other doctors and their patients. For that purpose I accepted the kind permission and offer of Sir Burdon Sanderson to give the koumiss to some patients in his wards at the Brompton Hospital, where I made my notes and observations. I must express my deep sense of obligation to Sir Burdon Sanderson and to Sir Lauder Brunton for all their kindnesses shown to me during that time. I must also express my gratitude to my esteemed friend the late Dr. Murchison, who opened his wards at the Middlesex Hospital to me to select my patients for koumiss brought directly from my house. I shall never forget how especially one female case, in that ward, who was being treated for diabetes mellitus for some time with opium, embraced the opportunity of getting a new and refreshing drink with such expression of joy and happiness that she asked me the following day to give her more of the koumiss A No. 3; but as the opium had made her extremely dry in her mouth, parched, and costive, I allowed her to mix

the koumiss with skimmed milk, which prevented constipation. This patient was dreadfully emaciated, indeed on the brink of the grave ; but the koumiss suited her so perfectly that in a few days she had increased several pounds in weight, and got so much stronger and better that her relatives, who had arrived when she was moribund, took her away home into the country to drink skimmed milk alone.

My experience with the koumiss treatment in hospitals at that time showed that the greatest difficulties existed in keeping the koumiss properly, and administering it regularly in its sparkling condition. The attendants, and nurses besides, dislike the opening of the tightly-corked bottles, and the spurting of the koumiss from the bottles or through the champagne taps.

In private practice it did very well, when the manufacturers used all care and efforts to satisfy every practical and commercial requirement and precaution. From the very beginning I had in private practice excellent result ; my wife's case I described more in detail because she was the very cause of my attempting to make koumiss and to introduce it in England. If you read such medical papers of that time as the *Lancet*, *British Medical Journal*, etc., you will find what excellent results the koumiss, which was then made by E. Chapman & Co. according to my prescription, had produced generally. It would look pretentious for me to detail the numerous cases which have personally come before me, but I value especially the cases published by other doctors. Dr. Carter Wigg's case of *heartburn* and *albuminuria* described in the *Lancet* of 9th January, 1875, will well illustrate the advantages of a koumiss diet : " A. B., a gentleman farmer, aged 52 years, weight about 16 stones, began to show symptoms of failing health in January, 1873, but up to that time had enjoyed good health. In march upon examination, his urine was found to contain albumin, specific gravity 1022 ; great difficulty of breathing, and those other most distressing concomitants, dropsy, dyspepsia, with painful eructations and foetid gas, great thirst, constant sickness and retching, every kind of food and drink being sooner or later rejected. I advised a trial of Chapman & Co.'s A1 koumiss, one pint bottle daily, which was taken and retained on the stomach (rarely during the remainder of the illness was the koumiss omitted). After taking it a few days the dyspeptic symptoms lessened, and he was able to take other food, gradually also increasing the quantity of koumiss until at times he took two quart bottlefuls a day, under which his improvement was remarkable. It was his constant and at times for days together the only diet his stomach would retain ; and as showing its perfect assimilability I may observe that owing to a case having miscarried in May, the specific gravity of his urine, which had been 1018 to 1020, fell after being without koumiss two days to 1014, and again twenty-four hours after resuming its use the sp. gr. was 1016. Again, after an interval of a month., a case was stolen, and he was without it for nearly days ; the sp. gr. of the urine during that time varied from 1012 to 1009, and three days after the resumption of the koumiss it recovered to 1019." In concluding his com-

munication, and having commented on the power of koumiss in dyspepsia, wasting diseases, low assimilative powers, and in gastric fever, he states that, having then had no experience of its use in typhoid and in scarlet fever, he should expect similar benefit would be therein derived, and on this subject I can confirm his conjecture abundantly in my own practice.

Dr. Niemeyer says that Dr. Schmidt, suffering from *albuminuria*, has repeatedly freed himself from dropsy by the free use of butter-milk; but my experience is that koumiss accomplishes this purpose still more readily, and that oedema and anasarca disappear with improved action of the heart.

Dr. Thomson, of Luton, communicated notes on a case of *diabetes Mellitus* treated by him with koumiss to the *Lancet*, 17th August, 1878, which will very satisfactorily and independently corroborate my own observations. This patient, 29 years old, benefitted so much that his inordinate thirst, which was at first a marked feature, had disappeared, and after having returned to his work for some weeks he said he had not felt so well and strong for more than twelve months. During treatment he, too, neglected twice to take his koumiss for some days, and the effect was most noticeable. During these intervals no diminution of urine took place, but within forty-eight hours after resuming it the quantity began to diminish, and the diminution was continuous and gradual. So confident am I, says Dr. Thomson, that the improvement was due to the action of the koumiss, that I shall employ it with confidence should a case of this kind come under my notice again. The koumiss was not employed to the exclusion of every other article of diet. He was allowed a non-sugar-forming diet. I saw the man last in May, and he was then at work, feeling fairly well, and the urine had not increased in quantity.

My specially-prepared "*Diabetic Koumiss*" is also prepared by the present manufacturers of my preparations of Koumiss, who have taken over the business of E. Chapman & Co., in 1883. It was on the 29th of Nov., 1882, that Mr. Mitchell Henry, M. P., F.R.C.S., previously Surgeon to the Middlesex Hospital, wrote; "Dr. Jagielski's koumiss has for some years been used in my house with the greatest possible advantage under his own care. I have recommended it to several delicate persons recovering from severe illness, and have observed it to produce marvellously good results. It requires to be very carefully prepared, and can be taken when no other food can be retained. I consider it a great benefit to society. I know nothing of any other Koumiss except that prepared according to Dr. Jagielski's process."

On 9th of March, 1883, Mr. Mitchell Henry wrote to me about his old and very best friend, to whom he came personally to fetch me in his own carriage, in apparently the greatest anxiety and hope of yet saving his friend's life if he could: "The old Colonel is enthusiastic in your praises, and you have certainly saved his life." The patient had double pneumonia in his high age, being the oldest Member in the House of Commons; his two medical attendants despaired of his recovery, so they retired, and I successfully treated him with an exclusive koumiss diet and homœopathy.

Dr. Wm. S. MacKenzie, of Edinburgh, had in 1877 his wife living on my koumiss for about three weeks, and its beneficial effects appeared to him marvellous; she suffered from blood-poisoning after confinement; her stomach rejected everything else, and he could not help thinking that if it had not been for the railway conveyance's delay in forwarding the expected lot of koumiss she might have been living yet; and he stated that he could not speak too highly of this "wonderful" koumiss.

I prefer mentioning those cases of other doctors, to those I could describe here in detail of my own patients whose lives I have been able to save and to prolong. I do this with a certain strong feeling of moral duty to myself as well as to my professional brethren engaged in homœopathic therapeutics, the more so because I have become aware that since I have become a member of the Homœopathic Medical Society of London, the publication in allopathic medical journals of doctors' own cases have gradually decreased and ceased. I, therefore, will mention in support of my own experience, some more of those published cases treated with my koumiss. Thus, Dr. E. Murlean, of Hogarth Road, Earl's Court, stated in 1877 that the patient on koumiss was very much better, and that he was bound to admit that the koumiss was retained and tolerated by the stomach when everything previously tried had been rejected.

Dr. Richard Lothar's patient (Lancashire) rejected everything; she was "in extremis." For a few days she had been supported solely by beef-tea enemata, for all food produced pain, nausea, and continued sickness. The koumiss agreed from the first and was very grateful; it has relieved the dryness of the mouth and intense thirst, and the patient's condition was gradually improving. He had faith in the koumiss, having tried it before in a serious case of ulceration of the stomach; the result was as remarkable as in this present one.

In the *British Medical Journal* of January 19th, 1878, occurs the following:—

" THERAPEUTIC MEMORANDA.

THE TREATMENT OF OBSTINATE SICKNESS BY KOUMISS.

"I wish to record briefly the result of my experience in the treatment of obstinate sickness by koumiss; for I believe with Dr. Jagielski, that we possess here a simple but a satisfactory remedy, and one likely to be of use when the ordinary remedies fail.

"Miss S., aged 31, far advanced in phthisis, and already much exhausted by incessant cough, profuse sputa, sweats, and diarrhoea, was suddenly attacked by hæmoptysis, accompanied by obstinate and distressing sickness. The patient was in *extremis*. After exhausting the ordinary remedies, I administered, cautiously at first, No. 2 koumiss with the best results. The sickness immediately ceased; the hæmoptysis merged into tinged sputa and gradually disappeared; the pulse became stronger; the skin warm and moist, the diarrhoea ceased. The patient, who had previously loathed all food, gratefully took the koumiss, at first alone, then

mixed with milk. A return of hæmoptysis in the fourth week, with secondary bronchitis, took her off.

"Miss T., aged 50, was attacked by hæmatemesis (due probably to gastric ulcer) and persistent vomiting. Iced drinks, gallic acid, etc., failed to give much relief; for, when food was taken, the sickness and hæmatemesis returned. We were reduced to the treatment by enemata of beef-tea and brandy, which was continued for five days, notwithstanding which the patient became much weaker. No. 2 koumiss was then given, as in the last case, with good results.

"In a case of severe vomiting caused by mental shock, but remotely connected with concussion of the spine, the result of a carriage accident, koumiss No. 1, made from the extract, was successful after hydrocyanic acid, bismuth, creosote, etc., had failed.

"In several other cases I have given koumiss, and always (except when malignant disease was present) with good result. In stricture of the colon (the diagnosis being subsequently established by *post-mortem* examination), it relieved the pain and attendant sickness, and prolonged life. In the vomiting of pregnancy and in obstinate constipation I have seen it do good.

RICHARD LOWTHER, M.D., CARTMEL."

The following statements have appeared in the same journal, October 6th, 1877:—

HOSPITAL NOTES, CHARGING CROSS HOSPITAL; DR. GREEN'S WARDS.

In four cases of gastric ulcer, Dr. Green has lately used Chapman's Koumiss, particularly selecting the medium quality as containing a smaller proportion of casein, and using it when in such a condition, that it readily flows from the bottle. Four patients have lately found to derive great benefit from its use. In the case of a lady suffering from chronic gastric ulcer, when all treatment had failed, and she appeared to be in a hopeless state for want of nutrition, koumiss was given in small and frequent doses; it was well borne without pain or vomiting, and the patient made an excellent recovery. Koumiss has likewise been found useful in some of the diseases of children.

Dr. Norman M'Claskie of Edinburgh, had a patient, Miss L. G., who suffered from anæmia for some time; constant sickness set in, with gastric catarrh. All the usual remedies were tried without avail, everything being rejected. He ordered koumiss, A or Full Koumiss No. 1, in small quantities at first, and persevered, gradually increasing the dose. After the first few days the sickness abated, then ceased. Twenty-four ounces were taken in the twenty-four hours, and for three weeks this formed almost the entire nourishment of the patient. At the end of that time the stomach was able to retain light liquid nourishment, and Miss G. gained ground considerably. About three months afterwards the vomiting returned, and, other remedies failing, koumiss was again resorted to and after a day or two the sickness ceased. "The koumiss treatment," Dr. M'Claskie says, "was and still is continued, the quantity being gradually

diminished. My experience with koumiss has been limited to this case but as it afforded scope for a very fair trial, I have reported it at some length. I shall naturally have great confidence in trying koumiss again in any suitable case, and must say that the beneficial effect exceeded my expectations."

The Vicar of—, Yorkshire, the father of this Miss G., wrote a very detailed report with some enthusiasm about the result of this cure, mentioning especially that "Champagne, ice, new milk, soda water, lime water, milk, pepsin wine, mineral acids, lacto-peptine, ipecacuanha, liquor arsenicalis in very small doses, hypodermic injections of morphia on the region of the stomach, beef-tea, port wine, enemas, etc., etc., were all tried, but the sickness was not allayed until our family doctor (Norman M'Claskie) introduced Dr. Jagielskie's sparkling koumiss."

Mr. Wm. Allingham, F.R.C.S., writes, May 25th, "a preparation [from genuine cow's milk, called 'koumiss' has now for some time attracted my attention. At first I was sceptical as to the benefits which were said to result from its consumption, but a somewhat extended experience has thoroughly convinced me of its great value. In cases where nutrition fails, where strength and weight are being lost, the virtues of this koumiss soon became evident; the appetite improves and the patient experiences a considerable increase of constitutional power. In 'cancerous' distractions, and other diseases of the large intestine, I have found koumiss of eminent utility, and can thoroughly recommend it to my professional brethren."

Dr. Llewellyn Thomas, Surgeon to the Central London Throat and Ear Hospital, to the Royal Academy of Music, writes in the *British Medical Journal* of Feb. 9th, 1878: "The remarks of Dr. Lowther in the *Journal* of January 19th, on the cases mentioned by him, well illustrate the value of koumiss as a remedial agent, and as a form of nourishment almost certain to be assimilated in what otherwise might be considered to be, perhaps, hopeless cases. In phthisis in the earlier stages, where regressiveness of appetite or disinclination for any food is a prominent symptom, as also in the laryngeal forms of disease, we possess in koumiss an agreeable and efficacious form of nourishment. In cancer of the stomach or rectum, in the vomiting of pregnancy, in mesenteric disease, in affections of the throat accompanied by dysphagia, in gastric catarrh or in gastric ulceration koumiss will be found valuable as a remedy and as a food. Some patients may consider that it is a somewhat expensive medicine, but if it be explained that it is also food, and that it is certainly cheaper than wine, this objection is readily overcome."

Dr. A. S. Myrtle, of Harrogate, gives four cases treated by koumiss in the *Lancet* of Dec. 12th, 1874: one of *marasmus* in the adult with unchecked vomiting—successful; one of *pycemia* with sickness, unchecked vomiting—successful; one of *phthisis* (advanced) with ulceration of mucous membrane, diarrhoea and hectic—successful; one of *rheumatic fever*, with gastric irritability of a most formidable nature—also successful. One of the earliest complicated cases in which I ordered koumiss was a patient

of Mr. Walter Mason, whose then assistant, Mr. E. B. Floyer, invited me to consultation, as they both considered the state of this patient, Mrs. M. G., twenty-four years old, likely to prove fatal. Mr. Walter published this case in the *Lancet* of Dec. 19th, 1874. This lady had had two children; during her third pregnancy her appetite became very indifferent, and her appearance greatly emaciated; four days before her third confinement she suddenly fell by the side of her bed before she had time to call for assistance; she did not lose her consciousness, but could not express her feeling in words. Four days after this fit she brought forth twins alive and healthy. On the fourth day signs of right hemiplegia existed, having come on during the night. Right arm and leg were paralysed completely as regards motion, and almost so with respect to sensation; she was unable to make water and the catheter had to be used; her appetite was gone, she could not retain anything. On the sixth day after her confinement I saw the patient, when she was unable to answer otherwise than by shaking or bending her head; pale and emaciated to the highest degree; skin dry and hot; urine offensive and thick; the hemiplegia unchanged; the bowels costive three days; nowhere pain, but great restlessness with delirium. I advised full koumiss No. 2, one wineglassful every two hours; she kept it down, took one pint during the night. In the morning, Nov. 18th, secretion appeared, followed by perspiration, which was carefully kept up; on the 18th urine more copious and clearer, and in thirty-six hours she passed urine naturally. No enema, no aperient; good sound sleep followed the delirium, koumiss liked and increased doses asked for; a wineglassful every half hour; skin moist, eyes brighter, slight movement of the arm and leg noticed. On fourth day koumiss and fresh milk mixed and continued. Nov. 23rd first spontaneous motion; koumiss now given *ad libitum*. Her voice returned by degrees; after three weeks the paralysis disappeared thoroughly, and the patient was considered convalescent. The twins were living and doing well.

You will admit that in such exhausted and dangerous cases the skill, energy and perseverance of the most hopeful practitioner are most severely tested, and when there is perhaps no remedy left to fall back upon, the koumiss may still be remembered for its very easily digestible as well as its assimilable features, which also have given proof of its highly nourishing properties, that have shown we may with safety depend upon it as an exclusive food and drink; for it not only renews and maintains the strength of the body during feeble health, but it increases at the point of greatest exhaustion the body-weight. Of course, in cases of vomiting these properties, although important, are but of a secondary indication, because our first endeavour is not to nourish, but to at once allay the vomiting, which would become dangerous if it could not be mastered. That this end can be readily attained by koumiss is, I think, shown beyond all dispute by the above-mentioned facts. In cases of chronic weakness, emaciation, dyspepsia, diarrhoea, exhaustion, and lung consumption, koumiss is invaluable, and even in cases of intestinal cancer I have lately had wonderfully satisfactory

results, when patients improved in their most troublesome sufferings, and felt comparatively well and happy.

You must not forget that there is really no new principle involved in the treatment of consumption by koumiss ; in fact, as long as these patients have no hæmoptysis, the usual foods and remedies for consumption will suffice particularly in regard to the milk and stimulants, appetisers, etc., and when these patients can have these and their appetite allows them to eat beef-steak, good slices of joints of beef and mutton, and digest these well, with foaming stout to keep them company of large quantities of wine, milk, whisky, etc., surely such consumptive patients will stand in no need of koumiss nor of Davos Platz or sanitary air institutions, because they can digest what they eat and assimilate what they digest ; they surely need no koumiss. But when the appetite falls off, dyspepsia and diarrhœa follow the consumption of food feverishness, expectoration, cough, weakness, and night-sweats, ect., increase, we may be sure that a change of diet, the treatment of koumiss, will do the expected work, and improve the patient rapidly. To give you an idea what the U. S. A. think of my koumiss, I will but mention one great physician, well known to all students of *Materia Medica*, Dr. E. M. Hale, of Chicago, who writes as follows in the *American Homœopathist* : "Superior to milk, whey, curds, or any and all foods, both for adults and children ill of fever, or convalescing too slowly, is that wonderful preparation called koumiss. This preparation is to milk what champagne is to unfermented grape-juice. It is effervescing, sparkling, and exercises a wonderful restoration and stimulating influence over the system enfeebled by disease. From the experience I have had with it in *scarlet fever* and *diphtheria*, I feel qualified to assert, if it was given in appropriate quantities to every child sick with these two maladies, the rate of mortality, instead of being one in five, would not be one in fifty. It is in vain that we pour down beef-tea, wine, broths, tonics and stimulants ; they do not nourish and purify the blood in zymotic diseases. Those who have not used the koumiss in wasting and prostrating diseases of children would be utterly astonished, as I have often been, could they watch its prompt and energetic action as a restorative. There is no danger of its attracting disease germs, for, if originally present, the fermentation process destroys or diminishes them, and they cannot get into it afterwards, for koumiss has to be kept, like champagne, in closed bottles, and only drawn by means of a tap, allowing a spoonful or glassful to escape at will, and air cannot enter the bottle while it escapes.

To be more explicit in relation to its use, let us suppose a patient with scarlet fever, and the second day of the disease. The fever is high (or possibly the temperature may be too low), the skin is dry, tongue, mouth and throat parched, and difficulty of swallowing. Give such appropriate medicines as you please, but give no other food than freshly prepared koumiss, a tablespoonful or two every fifteen or twenty minutes ; or in children of eight or ten years, a wineglassful or two every half hour or hour. No other food is needed, neither the so-called tonics or stimulants. Try it

in a few cases, my brethren of the profession and you will have occasion to give thanks to the physician, Dr. Jagielaki, who introduced it to the medical world."

I could write out numerous other cases published in medical papers, but I think these will give the present young generation of doctors sufficient interest to inquire for themselves in this question, and to try the koumiss in proper cases; for it seems to me, that koumiss is forgotten by many doctors, as it is not constantly brought before their notice. I shall be pleased if these lines attain their object, i.e., to revive it again in the memory of my readers. It is perhaps desirable to add that, though originally taken up by the manufacturers under my personal direction, I have for years ceased to have any business connection with koumiss in any way.—*Monthly Homœopathic Review*, December, 1, 1903.

HERBERT SPENCER.

The hand of death has removed from the ranks of the living, another of the triumvirate who conceived the theory of evolution, laid the foundations, and completed the mighty edifice. We do not attempt to appraise the size or the value of the part which each artificer contributed to the completion of the whole. It must be remembered, however, that HERBERT SPENCER'S achievement was unique in the annals of literature; with a limited scientific equipment, with no classical training, and with, at first, no conspicuous literary gifts he imposed upon himself, the task of systematising all knowledge and of symbolising in concrete ideas the processes whereby organic and inorganic nature had arrived at the stages of development at which he found them. He assumed at the commencement of his task that there were certain immutable laws which were responsible for all conditions of change, and as a sequence he laid it down that in all the phenomena of the material world there was a gradual passage of matter "from an incoherent homogeneity to a definite coherent heterogeneity, during which the retained motion undergoes a parallel transformation." Applying and extending this general formula to the interpretation of particular phenomena he sketched in his "First Principles" the outline of a philosophy which covered the entire ground of biology, psychology, sociology, and ethics. At the time that he moulded the skeleton of the system which he ultimately clothed with adequate tissues his knowledge of biology, psychology, sociology, and ethics was admittedly small. He was, as he described himself, "merely a synthetic philosopher," a systematiser of the work of others. His knowledge of the completed anatomy of his skeleton, with its nerves, its muscles, and its integuments, was still to be acquired, and was acquired as he proceeded with his task and then published for the benefit of the world in the volumes which unfolded the details of his many-faceted philosophy. The real greatness of the man is not least revealed in the fact that never, or practically never, was he compelled by force of evidence to abandon any of the original

propositions which he laid down in his "First Principles," or, with maturer experience and knowledge of the subject, to modify any of the important views which he therein enunciated. Guided entirely by first principles and laws which were universally applicable he seldom fell into gross error and by reason of the exactness of his methods few could criticise or find fault with his less important observations. The principles which HERBERT SPENCER enunciated are to-day accepted all the world over as the basis of an exact philosophical reasoning and his conceptions have influenced the directions of progress of almost every science. Biology has by no means been the least to profit by his work. Medicine has as yet reaped benefits which were hardly comparable with those which he has conferred on kindred branches of science; indeed, the full significance of his definitions of life and death and disease are by no means to-day as fully valued by those who attempt to unravel the problems of pathology as they undoubtedly deserve to be. The conception of disease as a "disturbance of organic equilibrium," a perverted manifestation of energy, and an uneconomical redistributing force, is one which has only found expression in some few of our medical writers who have come under the influence of his genius. But pathological manifestations, like all other natural phenomena, are subject to immutable laws, and as medicine becomes more and more an exact science we may expect to see among its practitioners a wider appreciation of HERBERT SPENCER's synthetic work.

HERBERT SPENCER was himself little interested in the problems of pathology, but such generalisations as he occasionally ventured to form had an illuminating influence on the conception of morbid processes. It has been a loss to medical progress that his philosophy extended so little in this direction. Up to the end of his illustrious career he fought with all the energy and the sincerity of which his profound mind was capable for the principle that acquired characteristics were, and must be, inherited. The truth or falseness of this postulate was, he contended, of the utmost importance to the progress of mankind, for according to the manner in which men regard this question so are determined their actions in politics, ethics, education, and sociology. In the appendix of the last edition of his "Principles of Biology," which was written only a few years before his death, and which therefore may be accepted as representing his final word on this subject, he expresses the depth of his feeling in the following words: "And now I must once more point out that a grave responsibility rests on biologists in respect of the general question (inheritance), since wrong answers lead, among other effects, to wrong beliefs about social affairs and to disastrous social actions. In me this conviction is increasingly strengthened. Though the 'Origin of Species' proved to me that the transmission of acquired characters cannot be the sole factor in organic evolution, yet I have never wavered in the belief that it is a factor and an all-important factor. And I have felt more and more that since all the higher sciences are dependent on the science of life and must have their conclusions vitiated if a fundamental datum given to them by the teachers of this science is erroneous, it behoves these teachers not to let an erroneous datum pass current; they are called on to settle this vexed question one way or other." The truth or the reverse of his views on the inheritable qualities of acquired characteristics is of universal importance, but more especially so in medical science; and although his proposition is by no means opposed to the accumulated evidence of clinical experience, nevertheless deductions from morphology, laboratory experiments, and microscopic investigation at least lay it open to serious doubts. As we have already said, HERBERT SPENCER's views have seldom proved wrong. His purview of organic evolution was so far-reaching in extent that we must hesitate many times before we reject on grounds of detail a proposition in which he firmly believed and which was material to the stability of his great argument

"Every change," wrote HERBERT SPENCER in his "Principles of Biology," "is towards equilibrium, and that change can never cease until equilibrium is reached." And again he postulated: "Evolution is an integration of matter and concomitant dissipation of motion." In his own powers of mental cerebration he provided one of those great climaxes of intellectual evolution which at times anticipate, perhaps by generations, the progress of knowledge. The integrated forces from which proceeded this intellectual outflow have now found their equilibrium and that life which was devoted to the fathoming of the knowable has passed to the regions of the unknowable. The influence of his intellect will persist, permeating men's minds and substantiating his conceptions in psychology.—*Lancet*, December 19, 1903.

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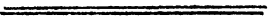
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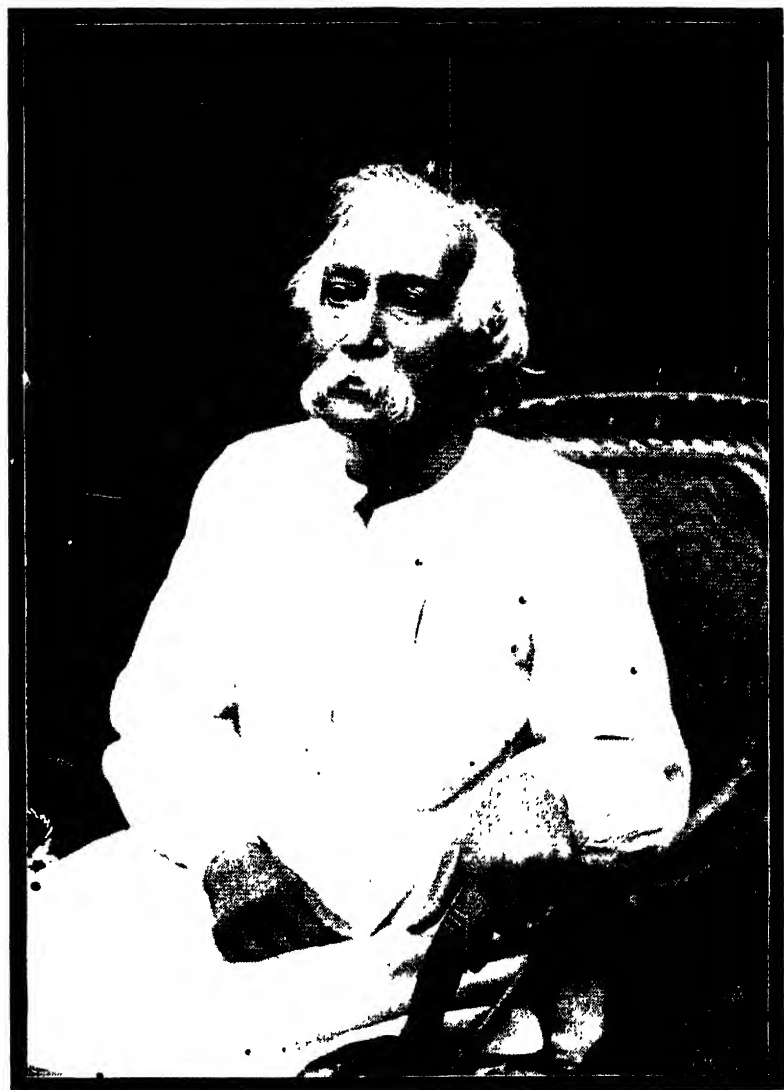
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Born 2nd Nov. 1833. Died 23rd Feby. 1904.

THE
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THE LATE DR. MAHENDRA LAL SIRCAR, C.I.E., M.D., D.L.

"That sanctity which settles on the memory of a great man, ought, upon a double motive to be vigilantly sustained by his countrymen; first, out of gratitude to him as one column of the national grandeur; secondly with a practical purpose of transmitting unimpaired to posterity the benefit of enabling models."

To the benefit of this principle none amongst the great men of modern India is better entitled than the subject of this brief sketch, whether regarded as a physician, a patriot, or as a man, who had made considerable personal sacrifice for truth and his country. Few among the noteworthy personages of our country would more assiduously shrink from the public gaze, or shun with a more sensitive persistency the "fiery light" which, in this prying age, beats upon the inner lives of eminent men. But a man of his transcendent merit, as a successful practitioner of the healing art, as an erudite scholar, as an eminent scientist, fired with zeal for the regeneration of his country through the agency of science must necessarily be before the public, and that public was, in his case, almost world-wide. He was known not only throughout India, but his fame spread to Europe and America. His advice was asked even from Australia.

Dr. Sircar was born of exceedingly poor parents in an obscure village of the name of Paikpara, in the District of Howrah, in Bengal, on the 2nd Nov. 1833. He comes of the stock from which have sprung the actual tillers of the soil in this country, but certainly not from what are called the lower orders of Society. He comes of the Vaisya caste. Dr. Sircar was not at all ashamed of the fact that he came into the world, unheralded by any reputation whatever on the part of his ancestors.* For are not the world's greatest men, the pioneers of thought and culture, their own ancestors? He took the highest pride in this, that he was born of parents who had "passed into the skies."

At the age of 5, he was brought by his mother with an infant brother of 6 months to the house of her brothers, Babus Iswar Chandra Ghosh and Mahesh Chandra Ghosh, in Calcutta (Nebutola). He was never away from that locality endeared as it was by early associations

Shortly after arrival at Calcutta, his father died at Paikpara, when only 32 years old. He had to be taken back to Paikpara on the occasion of the *sradh* of his father. After a short stay there, his mother, now a widow, brought back her sons to her brothers' where they remained for good.

His mother survived her husband's death for about 4 years, and died of cholera when she was about 32 years of age. It is remarkable that Mahendra Lal, the first born of his parents, was born when his mother was 24 years of age, a rather unusual age for a Hindu female to bear her first child.

The rudiments of his vernacular education was obtained in a neighbouring *patshala* under a *Gurumahasay*, and shortly after, the rudiments of his English education under the late Babu Thakur Das Dey, to whom he remained attached to the last.

At the age of seven he was put in the school of David

* "In a public speech about a quarter of a century ago he described himself as a man of the people, sprung from the actual tillers of the soil, primeval landlords if you like."—*Pioneer*.

Hare. Shortly after his admission Hare died. Of the burial of this philanthropist under remarkable circumstances, Dr. Sircar held a distinct recollection.*

In 1850, Dr. Sircar obtained a Junior Scholarship which enabled him to pass from the Hare School to the Hindu (afterwards the Presidency) College, where he soon distinguished himself as one of its brightest gems. It was while at this noted seminary of learning that he laid in a varied stock of knowledge—literary, philosophical, historical, scientific—which stood him in such good stead in after life.

While as yet at school, Science had already marked him for her own. He used to read Milner's *Tour through Creation*, a popular scientific work, with an avidity which was remarkable for a lad of his tender years. We cannot do better than let the eminent scientist speak for himself about this, the first turning-point in his distinguished career. In a speech delivered at the time of laying the foundation-stone of the Science Association, on March 27, 1890, by his Excellency Lord Lansdowne, Dr. Sircar referred to the incident which gave an impetus to his dominating scientific bias, with a rare tact and delicacy which is peculiarly his own, thus :

"My Lord, I knew a lad of 14 or 15, when I was of the same age myself, a lad, not at all remarkable for intelligence, but who had, what is called some thirst for knowledge, and a little enthusiasm in the pursuit of knowledge, who would feel an unspeakable pleasure in the possession of knowledge. I remember an anecdote of this lad, my Lord. ... With the characteristics of mind, just mentioned, he was naturally fond of reading scientific books. One day while reading Milner's *Tour through Creation* he came across the discovery of Sir William Herschell that the sun was no fixed body in space, but with his planets and their

* He thus speaks of it in his Hare Anniversary Address delivered at the Senate House of the Calcutta University on the 1st June 1876 :

"Never perhaps was that gratitude (of the Hindu) better and more gracefully displayed than at the death of David Hare. The prejudices of religion, to which the Hindus cling with greater tenacity than any other nation on the face of the globe, had from time immemorial opposed a barrier between the Hindu and Mlechchha. But gratitude for their departed friend triumphed over the prejudices of religion and broke through the barrier of ages. Hindu lads would not allow professional undertakers to carry the coffin of David Hare. Hindu fathers would not allow his mortal remains to rest anywhere else than in their midst."

satellites, was in motion and probably around some larger sun. The grandeur of this fragment of truth so overpowered him that he was out of his study, and for some time paced the long street on which his house was situated, regardless of the state of *deshabille* in which he was. From that day his thirst for knowledge increased with each drink he could take at the pure fountain of truth."

Thus it was that that long-forgotten volume (Milner's *Tour through Creation*) may be said to have laid the foundation of Dr. Sircar's future eminence as one of the foremost scientific men of his country in the present day.

Dr. Sircar entered the Medical College in 1855, where he remained for 6 years, and became the favourite of all the professors. It was in this wise that he attracted the attention of Dr. Archer, Professor of Ophthalmology: When in his second year, he had to take a relative (a young boy) of his to the Out-door Dispensary for some eye disease. Dr. Archer was in the habit of testing the knowledge of the students (5th year) who used to attend his clinique, by asking them to answer rather difficult questions on the anatomy and physiology of the eye and on the laws of light. It happened one day that none of the students could answer a question that was put to them about a particular point in the anatomy of the eye. Sircar, who was at a distance taking medicine from the compounder, answered the question in a rather loud voice. "Who is that fellow?" asked Dr. Archer. His students, who knew Sircar, told the Professor that he was a second year student of the College. "A second year student answering my questions—call him here." On approaching him, Sircar was literally smothered with various questions about the eye, and the answers being satisfactory, he was asked to attend his clinique every day, though the case for which he had been attending the Dispensary had become nearly well.

At the request of the senior students and with the permission of the Professors and the Principal, he delivered a course of lectures on optics, in order to enable the students to better understand the mechanism of the eye as an optical instrument. In this year he delivered a lecture at a meeting

of the Bethune Society on the Adaptation of the Human Eye to Distance.

His career in the Medical College was a brilliant one. He obtained medals, prizes and scholarships in Botany, Physiology, Medicine, Surgery, and Midwifery. He was sometimes ahead of some of his professors in information in their own specialities. He lost his gold medal in Medical Jurisprudence for having stated in an answer to a question that the lethal dose of arsenic was much larger than stated in books; that men are known who have accustomed themselves to taking it without injury in doses of more than a drachm. This was looked upon by the then Professor of Medical Jurisprudence as a gross mistake. The professor evidently had not read the most recent medical periodical on whose authority Sircar had made the statement.

At the insistence of Dr. Fayrer he went up to the M. D. Examination in 1863, and came out first, the other candidate, the late Dr. Juggobundoo Bose, being second. Dr. Sircar was the second M. D. of the University, the late Dr. Chunder Kumar Dey having been the first.

When Dr. Sircar took to practising medicine in 1861, he had already been a prominent figure before the public. He had success, so to say, thrust upon him. Among the many distinguished physicians, both European and Indian, in the early sixties, in sagacity and sound judgment, as well as in a thorough acquaintance with all the resources of his art, Dr. Sircar, though still a young man, had few equals and probably no superior. In diseases of the eye he was almost a specialist. In the same year that Dr. Sircar obtained his M. D. degree, a medical association was established in Calcutta through the exertions of the late Dr. S. G. Chuckerbutty, under the name of the Bengal Branch of the British Medical Association. At the opening meeting of this Association, Dr. Sircar, in the course of a long and fervent speech, denounced Homoeopathy as one of the systems of quackery. He was elected Secretary of the Association.

which office he held for three years, and then elected one of its Vice-Presidents. Dr. Sircar's opinion regarding Homœopathy changed while he was holding the latter office. On being asked by a friend to review "Morgan's Philosophy of Homœopathy," for a local lay journal he promised to do it at once! But the perusal of it convinced him that he could and should give no opinion on the book before subjecting homœopathy to a practical trial. But not knowing it practically himself he could not conscientiously try it. Fortunately at that time Babu Rajendra Dutt, a philanthropic lay Bengali gentleman, who had given him Morgan's pamphlet to read was practising homœopathy in Calcutta. Dr. Sircar did not think it *infra dig.* to watch cases under this gentleman, and the result was the conviction that homœopathic medicines, the so-called infinitesimal nothings, did act and act beneficially in removing disease. He thought it his duty to lay this result of his investigation of Homœopathy before his profession, and to recant what he had said in ignorance of the system at the opening meeting of the Bengal Branch of the British Medical Association. He accordingly read an address in Medicine at its fourth annual meeting, held on the 16th February, 1867, "On the supposed Uncertainty in Medical Science, and on the Relation between Diseases and their Remedial Agents." At the conclusion of this address he said:

I was so struck with the rapidity and completeness of some of the cures effected by the use of drugs selected after this principle (of similars), that I was compelled, in duty, to watch cases under this peculiar mode of treatment. I became satisfied that the cures were really the effects of the medicines, and not the result of the influence of the imagination, or of a restricted diet, or of the natural progress of the disease, as I used formerly to believe.

Having been convinced so far, I was induced to make trials of the drugs myself, and for this purpose, I made the peculiar preparations with my own hands, not trusting to the preparations of the shops. I was surprised to find that they do act,—and act most marvellously in removing diseased conditions, which yield only tardily to the ordinary mode of treatment I do not say that I have succeeded in removing all the diseases that have come under my observation by treatment based on this principle alone. Indeed I must freely admit, that I have failed in numbers of cases, where I was obliged to have recourse to the ordinary treatment, whereby I effected the final cure. The system, however, has many recommendations, and I deem it worthy of trial. I feel it, therefore, my duty most humbly to urge upon the

profession the necessity of recognizing it as one of our therapeutic systems.

This declaration of faith in Homœopathy, though so partial, was another great turning-point in the career of Dr. Sircar. He became an outcast in the profession of which he was acknowledgedly so conspicuous a member. To the eternal honor, however, of the lay press of India, it must be said that he received its ungrudging and unanimous support. For several months from the day following the fourth annual meeting of the Bengal Branch of the British Medical Association, the man, who had such a large and extensive practice, had not a single call. Some of his best friends, finding that he had ruined his bright prospects, for what they believed was a delusion, became suspicious of his sanity. One of his professors, of whom he was a favourite pupil, admonished him that his bread might be affected. But his calm and firm reply to him and to all else of that sort of low utilitarianism, was—"man must not live by bread alone, but by every word that proceedeth out of the mouth of God."

Seeing that the local and all other professional journals were shut to him, he could find no other way of ventilating his views and of thus convincing his fellowmen of the truth that there is in Homœopathy than in having a journal of his own. He accordingly started the *Calcutta Journal of Medicine* in January 1868, which he continued to edit to the day of his death. It will be seen that he did not give a sectarian name to the journal which, he announced in the Prospectus, "will be conducted on strictly catholic principles, the object being simply and solely the advancement of medical science, though the *Similia Similibus Curantur* law and the infinite, simal posology of Hahnemann will be recognized as the most advanced points yet reached in the domain of therapeutics." The Journal has been the instrument of spreading the cause of Homœopathy in India. Exchanges for the Journal have come mostly unsolicited, from England, France, Spain, Germany, Belgium, Italy, Greece, Russia, America, Brazil and Cuba.

The lull in his practice was but temporary. His house began to be more crowded in the mornings than it had ever been before, and his clinique became a regular out-door dispensary in which for the sake of homœopathy and the poor he gave advice and medicines gratis. Owing to the infirmities of age and prostration from frequent attacks of prolonged illness, he was obliged latterly to delegate his duties to his son, Dr. Amrita Lal Sircar, who has been cheerfully devoting for upwards of a dozen years the whole of the mornings to this charitable work, the father occasionally looking after serious cases.

Though by his adoption of Homœopathy he was plunged in a hot controversy and engaged single-handed in a fierce struggle against a powerful orthodoxy, Dr. Sircar did not forget what he had long been impressed with, that his country could only be regenerated through the cultivation of the sciences. In the opposition to Homœopathy by the old school he saw the grossest ignorance of the highest developments of molecular physics. He was thus stirred by a double incentive to pave the way for scientific research by his countrymen. He accordingly urged them to establish at least one national institution for the purpose, in an article which appeared in this Journal for August 1869. The article was so well received both by the native and the European press, that he was encouraged to formulate a scheme of the Institution and open subscriptions for the same. *The Hindoo Patriot*, then under the editorship of the late Kristo Dass Pal, gave its powerful and uniform support to the project. It was, however, not till after half a dozen years of incessant begging that he could collect enough money to start the institution in 1876, under the patronage of the then Lieutenant-Governor, Sir Richard Temple. Dr. Sircar was fortunate from the very beginning in having a true friend in that eminent scientist, Father Lafont, of St. Xavier's College. The institution was called the Indian Association for the Cultivation of Science, and the object

declared to be the cultivation of science in all its departments, with a view both to its advancement by original research, and to its varied applications to the arts and comforts of life.

Had it not been for the generous friendship of Father Lafont the Science Association could not have continued long to exist. The funds collected were just sufficient, with the aid of a house lent by Government, to purchase scientific apparatus for purposes of experimental lectures and to provide for the necessary monthly expenses. They were absolutely inadequate to provide for paid professorships. The Association could only work with honorary lecturers, and Father Lafont and Dr. Sircar were the only men in Calcutta, whose services as such could be confidently counted upon for a number of years. And it reflects no small credit on Father Lafont's love of science and of the natives of this country, that he lectured at the Association uninterruptedly for seventeen years, that is, till 1893, after which his numerous avocations and failing health prevented him from continuing his labour of love. He continues, however, to take the liveliest interest in the Institution, and is one of its perpetual Vice-Presidents. Dr. Sircar himself could only lecture for three years longer, that is, till 1896, since when, owing to shattered health from an attack of pernicious malarious fever, he was obliged to discontinue most reluctantly the dearest occupation of his life.

The establishment of the Association was hailed by the press, European and native, as an epoch-making event for India. One of the papers (European) had the following in its issue of Feb. 8th 1877 :

Since Dr. Sircar in 1869 in the *Calcutta Journal of Medicine* urged the necessity for an institution in this country and under native control for the cultivation of science, up to the present year when his idea has found practical realization, his patient, persistent, and single-minded devotion to the object he had set before him has been such as may well elicit the sympathy and admiration, not only of every devotee of science, but of every friend of human progress, of every admirer of unselfish heroism, of every reformer, and of every patriot. At one time, his enterprise seemed so hopeless that many men would have set him down, as some we suppose did set him down, as an unpractical dreamer. He

seemed like a gifted architect spending his life and genius in planning an edifice for the erection of which no materials existed. Time and the result have already justified him, and we doubt not that coming generations will preserve his name as one of the worthiest pioneers of the splendid future which we all hope is in store for India. We do not believe that we use the language of exaggeration, but the simplest language to describe a notable fact, when we say that a new era dawned on this country when Dr. Sircar published, and resolved to act upon, his conviction, that "the only method by which the people of India can be essentially improved, by which the Hindu mind can be developed to its full proportions, is by the cultivation of the physical sciences."

The association has made considerable progress since it was started, having got a well-situated local habitation, a good lecture hall, and a well-equipped laboratory. But Dr. Sircar, as its founder, was naturally not satisfied. He was almost in despair of its continued existence so long at least as a few professorships were not endowed. Year after year he appealed for funds, in which he was powerfully supported by successive Lieutenant-Governors and Viceroys, but somehow the appeal seems to have fallen on deaf ears. His countrymen of Bengal, with some honorable exceptions did not appear to realize the magnitude and importance of the Institution, and consequently could not be made to believe that a really large amount of money, much larger than that subscribed, was absolutely necessary to enable the association to fulfil its functions. Referring to the magnificent munificence of Mr. Tata of Bombay for the carrying on of a similar scheme, of which he spoke in terms of glowing sympathy, Dr. Sircar made what he called his final appeal to his countrymen at the twenty-second annual meeting of the Association, held in April, 1899, under the Presidency of the Lieutenant-Governor of Bengal, as follows :

It is now for you, my countrymen of Bengal, to determine what you are to do with this Science Association which you have established and which you have advanced so far—whether you are to advance it further or leave it as it is to die of inanition. It cannot continue long without endowed professorships. From the very beginning I have been telling you that in order to enable the Association to do its legitimate work, that of research, you must have men devoting their whole time and attention to special subjects, and that you must provide for them. But somehow or other I have not been able to convince you of this necessity, and the result is that while we are sleeping over our sins a faster presidency has started the country by what appears

to be a new scheme involving an outlay calculated to tax the resources of an empire. Neither the scheme nor the estimate for carrying it out is new. I have been giving out my views of both whenever I could get an opportunity for doing it. I have been giving you accounts of the costs of the various laboratories of the world, of the princely and disinterested gifts for the endowment of new professorships here, or of whole institutes there. But these stories coming from hackneyed lips have apparently had no effect. Now that I am feeling that I have come very nearly to the end of my life's journey, I do not see what more I can do than solemnly and imploringly to ask you to take the burden from off my shoulders and transfer it to yours.

But apathetic Bengal was unmindful of the preachings of her own prophet. It must be some consolation to Dr. Sircar that though his patriotic endeavours in this matter were disregarded by his own countrymen, they were appreciated by the highest authorities. At the Convocation of the Calcutta University held in 1900, after alluding to Mr. Tata's scheme, Lord Curzon, as Chancellor, spoke of Dr. Sircar's institution as follows: "You have, I believe, in your own midst a society which, on a humble scale, because it is only possessed of humble means, attempts to diffuse scientific knowledge among the educated population of Bengal. I allude to the Indian Association for the Cultivation of Science—(applause)—to which Dr. Sircar has, I believe, devoted nearly a quarter of a century of unremitting, and only partially recognized, labour (applause). I often wonder why the wealthy patrons of Science and culture, with whom Bengal abounds, do not lend a more strenuous helping hand to so worthy and indigenous an institution." At the same convocation, the Vice-Chancellor, Sir Francis Maclean, spoke of Dr. Sircar as "an Indian Votary of Science, upon whom we conferred the honorary degree of Doctor of Law the year before last, (who) has been devoting a lifelong service in preparing the ground for the cultivation of science by his countrymen."

Though he suffered so much from his own profession, Dr. Sircar did not suffer in the least in the estimation of the public or of the Government. His speech at the Education meeting at the Calcutta Town Hall established his reputation as a man of culture, and as an orator of no mean order. "He has since been in requisition at every important

public meeting" and on each occasion he has displayed the same qualities. "He has been an elected Commissioner of Calcutta for many years and his services on the Municipal Board has always been valuable, especially with his wide knowledge of sanitary science. It was at his motion that a European expert was appointed Health Officer of the city of Calcutta in preference to a native medical officer."

He was appointed a Fellow of the Calcutta University in 1870, and, in recognition of his scholarship and varied attainments, was placed on the Faculty of Arts. He was appointed Sheriff in 1887, the duties of which, with his deputy Babu Ganesh Chunder Chunder, he discharged to the entire satisfaction of the Government and the public. By three successive Lieutenant-Governors (Sir Rivers Thompson, Sir Steuart Bailey, Sir Charles Elliott) he was appointed Member of the Bengal Legislative Council from 1887 to 1893.

In 1883 the Government of India, in recognition of his services in the cause of Science, decorated him with the insignia of the Companionship of the Indian Empire (C. I. E.) And in further recognition of the same and other services, in the cause of education generally, the University conferred upon him in 1898 their highest degree, that of Honorary Doctor in the Faculty of Law about which the Chancellor, Lord Elgin, said: "I think that the University has chosen a very appropriate occasion for conferring on Dr Mahendra Lal Sircar, the Honorary Degree of Doctor of Law in recognition of his eminent services in the cause of Scientific education...Certainly during last year we have been able to observe convulsions of nature on a scale which is almost without parallel. And we know that millions of our fellow-subjects have been suffering from privation from causes of which, we may say, the investigator has yet much to investigate and determine. I congratulate, therefore, the University, as well as Dr. Mahendra Lal Sircar, on the occasion which has been selected for conferring upon him the Honorary Degree of Doctor of Law." The Vice-Chancellor,

Mr. Justice Travelyan, also said: "The degree which has been conferred to-day upon Dr. Mahendra Lal Sircar was unquestionably his due. The help which he has given to the promotion and better knowledge of science in Bengal by the foundation and maintenance of the Indian Association for the Cultivation of Science of itself deserved this recognition. In conferring this degree upon him, we are not merely honoring his labors in the cause of science, we are also endeavouring to repay to some extent the debt which we owe to him. For many years, in spite of the many calls of his professional work, he devoted much of his time to our service. For ten successive years he was a member of our Syndicate, and frequently acted as its President during the absence of the Vice-Chancellor. He was also for four successive years President of the Faculty of Arts."

He was, perhaps, the oldest member of the Asiatic Society of Bengal, was frequently elected a member of its Council, and was its representative on the Board of Trustees of the Indian Museum.

A word or two about Dr. Sircar's personal appearance may not be altogether out of place in this sketch, especially, regard being had to the fact that he had a remarkable physiognomy. And if human physiognomy has ever been at all anything like an index, good, bad, or indifferent, to the inner man, it must be admitted that Dr. Sircar's outer self was no less striking than his inner self. His person which was rather below the middle stature was gracefully formed; his features had the general expression of simplicity and benevolence, rendered more interesting by a profound philosophic depth and calm which pervaded them. Such eyes, so noble a brow, with its scanty locks so thinly scattered; so symmetrical a profile, so expressive a mouth, so fine and glowing a complexion; such a combination of manly dignity and beauty, would be hard to match in many another countenance.

It now remains for us to portray the character of this remarkable personality. Perhaps the strongest feature in his character was his sturdy independence, joined to his unflinching devotion to truth and duty. His integrity was most pure, his justice most inflexible; no motive of interest or consanguinity, of friendship or hatred, could bias his decision. He was in every sense of the word, a wise, a good, and a great man. His greatness was never shown to greater advantage than in his habitual, outspoken frankness in expressing his views and opinions, which "makes you feel that you are dealing with a man whose character is as transparent as crystal." It was, however, Dr. Sircar's misfortune to be misunderstood by a section of his countrymen. He was believed to have a temper irritable and high-toned. And, admitting he had, did not his reflection and resolution invariably obtain ascendancy over it? Beneath a rough outside, or what was seemingly so to those who did not know him intimately, beat as warm and benevolent a heart as ever beat in a human frame. The tone of harshness which his language at times assumed in conversation ought not to be set down to his unfeeling heart, but to his uncompromising opposition to sham or affectation of any kind; for he had the warmest affections and the kindest feelings.

In politics Dr. Sircar held advanced views, but he was none of your flaming patriot given to indulging in inane platitudes of India's great past, or in platform blusterings against the powers that be. He never lent his support to Government when in his opinion it was wrong; for as is well-known, on the occasion of the famous Jury Meeting, he denounced in no measured terms Sir Charles Elliot's obnoxious notification. Undeterred by the frowns or unseemly by the smiles of Government or the public he strenuously upheld the cause of truth and justice. In matters of social advancement and reform his views were as pronouncedly liberal, and had their root in his deep and innate regard

for woman as the co-equal of man." And that regard found its practical embodiment in the "Rajkumari Leper Asylum." The Asylum was associated with the name of the beloved angel of a wife, but for whose loving ministration and tender care "he would have long ceased to be," as he himself said on the occasion of the laying of the foundation-stone of the Asylum by the then Lieutenant-Governor, Sir Charles Elliott.

If religion, as Bishop Taylor says, consists not in knowledge, but in a holy life, Dr. Sircar's was pre-eminently a religious life. He never professed a religion in the popular sense of the term. His religion, as appears from his lecture on the "Moral Influence of Physical Science," consisted in an absolute faith in a Supreme Creator and Moral Governor of the Universe, and in the endeavour to live and act with that faith as his pole-star. Thus religion, in its true sense, was ever to him not only his "chief dependence" but his "dearest enjoyment." All through life he had been an uncompromising opponent of bigotry, intolerance, idolatry, and superstition, and hence it was that he was mistakenly looked upon by some of his countrymen as an un-believer in God. Dr. Sircar firmly believed that it was science and science alone which could give man a true conception of God, the foundation of all true religion. In his opinion, "the elevated conception of the Deity, which springs up in the mind from a contemplation of the universe as presented to us by Science, must be incompatible with all unworthy conceptions of Him. In other words, superstition in any shape and a knowledge of physical science cannot exist together." It is noteworthy that Dr. Sircar held Jesus Christ in the highest veneration as the greatest exemplar of Humanity. Dr. Sircar's command over the English language has been no less admired than his high

* "My devotion to woman as the guardian-angel of infant humanity, my reverence for woman as our first preceptor, and my love for woman as the sweetener of life, have not been derived from Western education, great as its influence has been in otherwise modelling my character, nor from our own *Shastras*. They are inherent in me, and the great wonder with me is how any man can be void of them."—*Speech on the occasion of the laying of the foundation-stone of the Asylum.*

scientific attainments. Whether as a writer or as a speaker he always evinced the most consummate literary predilections. Indeed, every scrap from his pen bears the impress of a skilful literary artist. Dr. Sircar's speeches were greatly admired even by such high personages as Sir Stuart Bayley and Sir John Woodburn. And no wonder, for their rich texture and glowing colours are no less pleasing to the ear than edifying to the soul.† A member of the British Parliament, who had heard Dr. Sircar speak, was astonished that one of the best speakers in India was a homœopath.

The above is an imperfect sketch of the worthy whose life's story it would require volumes adequately to unfold. All we have been able to do is to glean stray items of his many-sided life, and to bind them into such sheaves as we could. But still, our labours will not have been in vain, if our young men would endeavour to tread in the footsteps of the heroic and noble soul who, in the words of the poet, had all through life been—

"The tender father and the generous friend .
The pitying heart that feels for human woe ;
The dauntless heart that fears no human pride ;
The friend of man, to vice alone a foe."

No more graceful or appreciative *critique* on Dr. Sircar's life and genius could be conceived than that penned by a Bengali Bard, whose glowing verse would be a fitting close to our sketch :—

"Who risen from the ranks
By wealth of mind ennobled Poverty
Itself : who sowed in gloom and reaped in light
Successful tiller of the richest fields
Of knowledge ; noble builder of the dome
Whence Science spreads her living influence
O'er his fatherland ;—kindly healer,—saviour
Of suffering humanity by Art,
Instinct with heavenly mercy, love, and grace."

. NABAKRISHNA GHOSE : *The Last Day.*

* The *Pioneer* writes: "Dr. Sircar has stocked his mind with the best productions of English literature, and what he speaks or writes possesses naturally great literary merit : and in the prosaic debates of the Council Chamber he would often make a charming and poetic speech."

OH SIRCAR, OH OUR KING !

By DR. HEM CHANDRA RAY CHAUDHURI, L.M.S.,

Oh, our uncrowned king, you have forsaken us ! Why, you have left us in the dawn, giving only a part of your light. It might have been your full bloom, but it is the dawn of our recommencing civilization. Could we not keep you a few years more ? They say in France, the adherents of that phagocytical Metchnikoff, that life will be prolonged to two or three centuries. Has that been realised ? Can that be fulfilled ? We would have insisted you to follow his rules, and you, surely, would have done so for us, had there been rules, maxims, precepts, and injunctions. Vain hopes, invain potentialities and dogmatic forecasts have hood-winked the world since the misty mornning of creation. Organic creatures do not live long ; inorganic bodies waste, decline, dwindle and are gradually reduced to nothing. It would be an immense benefit if you and our other great men could live more than their period. Our hopes for our future are gradually vanishing away.

Yours was a ceaseless work. From birth to death you toiled, troubled and laboured hard. Aye, some for yourself, but mostly for others, the country, the people, the mass and the individual. Ten days at the end, short period for your sufferings, and a hopeful infancy were your respite. That was your happiest life when knowledge did not enter in you. An unconscious bliss. Conscious ignorance cannot be a blessed thing. The great Crookes believes in soul and so you did. Crookes declares that he will put us in possession of scientific facts which will establish the domain of soul. A correspondence with the unknown will then be a knowable matter. Material or immaterial—a speculation. Dear as we were to you, perhaps you will show the kinetic energy of your happy soul. One sacred touch of that ultra-aetherial spark will make the whole India kin. Can you tell us of the future of India, enveloped in the eternal gloom beyond the mortal sight ? To you, now, it is a clear visible perception of light, unfathomable darkness dispersed and dispelled. How dear to you was our Fatherland ! A sign will lead us how to act.

Will you be quiet under the mystic influence of a future life, for which you so much aspired ? Perhaps, you may be silent,

as you have already indicated the way, times without number. It is science, and all the scientifics—science in religion, humanity, individualism and socialism. We can not dissociate ourselves from the predominant influence of science. How you taught our people to follow its inexorable and hard truths. Maudlin sentimentalism to nescience and unscientific faiths will not confer power to avoid its laws. With what earnestness you told us of the three laws which guide the administration of medicine. You reiterated, echoed and re-echoed them but few could appreciate you. Homœopathy was your advanced doctrine. A renovated Hahnemann (as he positively would have been, had he lived till now) was your guide in the sphere of medicine. How you appreciated, honoured and emblazoned homœopathy in 1867. You were then in its threshold. By your intellectual conquest, they all suffered a terrible defeat, the mighty Philistines. The arena was the Sanhedrim of the Pedants. Mighty laurels came for you from all the quarters where the reign of laws was supreme. Ah ! can you still be called our uncrowned king ? The crowns and wreaths were of roses, certainly with their thorns. Perhaps, that incentive fragrance of roses gave you the thorny way. There was no peace with you for homœopathy and science. Such a thing as Milky Way exists in heavens. It is for them who have thorny ways in earth. Milky way is a path of peace among the innumerable bright stars. A marked perception of light not created by one sun but by many grander suns, perhaps giving more effulgent rays, day and night, than our own *primum mobile*. The suns are the first products of Kinetic energy, shaped from the material Chaos.

In 1878, the mighty Pedants refused to sit with you in their cabinet of consultation,—the Faculty of Medicine. They had enough subjects for deliberation. Low and debased schemes could not succeed in your presence. They could not see their way in the reign of laws, unlawful as they were. Toleration was forgotten in their irregular and unmethodical attack. It is a mockery of justice, that the unjust held their sway in that edifice of knowledge, the University. We all say that knowledge is light. Where was the light, then ? There was an unfathomable chaotic darkness. It may be said that broad cultivation of intellect is light, and it is not knowledge. Inconceivable, ill-defined,

and uncouth assumptions are beyond the pale of any illumination. The self-illuminated can bestow the light. The orthodox stood in their own light. You tried to train an army of regulars. The irregular yeomanry with their ancient and antiquated bows and arrows ill calculated their power in these days of maxim guns.

As soon as the opposition from without could be subdued, opposition from within ensued. The master of the amateurs Babu Rajinder Dutt created a wide field for the trained and, not for the untrained. Profession, a regular organization requires a well grinded friction to polish. It is based on a methodical rule and not on a sudden percussion. A continuous process of evolution is necessary for a formed man to effect reformation. The unformed irregulars can only bring catastrophes and cataclysms. A ray of light in exact opposition to another produces darkness. They instead of making the light more luminous tried to create an impenetrable gloom. Hahne-mann never expected that barbarous hordes in the name of freedom would be free to slay their own goddess. Had he been living, he himself would have issued a ban of excommunication for their own benefit.

Aye, you did so much! May we and our inferior exertions supplement your masterly activities? Science and homœopathy have taken a deep and an unshaken foundation in India. Science can count now its innumerable adherents. Some of them are worthy of the cause they have undertaken. Alas! there are few in homœopathy to represent its scientific aspect. Practitioners of homœopathy, business men and busy men, know how to be useful to themselves. O, for a spark of your inspiration! Can that torch of light be kept magnificently illuminated, thus handed on to us? There is enough hesitation to hold it as you did. Dynamites may not be applied to out-blast our citadel. Are we enough powerful to prevent a wreck from a cyclone created by our own depression? The answer is enveloped in the gloom of fortuitous future.

Aye, our Mirabeau of this great province, a part of the vast empire, with a tradition not less than that of France. Not a Mirabeau of political faith, but we had you in the scientific sphere. Not a Mirabeau just on the eve of the French Revolution, obstructing and scheming against that national rise. You, our Mirabeau,

assisted in the gradual upheaval of a constructed nation, not of one but of multifarious castes, of many distinct creeds and colours, for their regeneration and material salvation. Your political faith rested on science, and science alone. Not dogmatic, but ratiocinative and persuasive, you showed us a zeal and fire not unequalled in any of the occidental heroes. A firm believer of progressive homœopathy, the faith of humanity, wisdom and science, you held it as sacred as the holiest of the holies. It will be a sacrilege, a profanation to speak otherwise. There is sacro-sanctity in that faith, that system, and that method.

You were our Mirabeau in so much as to card, to spin and to weave the textile fabric of homœopathy in your own hand-made machine. The Journal of Medicine was your appliance to put Indian homœopathy in a proper shape. You did not entertain a doubt that your apparatus will not succeed. Most of our countrymen hesitated to help you. They said the work is an impossibility. Like the French hero, you vehemently uttered "*Ne me dites jamais ce bête de mot,*" "Never name to me that blockhead of a word." In the end, you proved that you were right. Your detractors may say that nothing succeeds like success. It was not a game of chance with you, the conclusion was the effect of cool calculation of a sober mind matured in the school of adversity. The luminous rays of effulgent light possessed by you directed the path that was trodden. The sequence was a glorified execution.

We live in these sciolistic days. Vain strutting and idle jotting make many lively figures. What a complete abhorrence you had for all of them. Deep down was your search. Boring and burrowing, stratum after stratum, in quest of precious minerals, multitudinous formations of earth and metals, inorganic materials and organic remnants, massive stones and petrified bones, you could not be satisfied, unless something precious, imparting a large and exact amount of knowledge came to your possession. It was a scrutinising and careful look. With what patience you studied natural phenomena and facts connected with physics. The presence of electricity inside a hollow sphere when it is charged with that subtle agent, gave an electric exhilaration in you. The modified proof-plane, that tiny accumulator, gave you a peculiar conquest, a solution of that puzzle—the supposed one

aided character of that magnificent force. With what ecstasy you explained to your colleague and comrade who fought the battles for science, against nescience with you. The Rev. Father E. Lafont is always and will ever remain a steadfast adherent to that glorious object—the ovation to science. The experiments with Crookes tubes following the record of that redoubtable scientist gave you insight into that peculiar state of matter. The infinitely small particles, the ions then unknown, presented a beautiful spectacle by their bombardment. You conjectured and surmised that the atoms were not the ultimate particles of matter. Now the behaviour of the ions of radium substantiates your conjecture.

Can I forget the evening when the actions of Crookes tubes were explained to Lord Lytton in the Government House. The amazing behaviour of one millionth of atmosphere, perhaps a little more or less, could be explained to the satisfaction of His Excellency. Two European professors of science were arguing in a sophisticated way against you. They would not believe the bombardment of ions. The wheels of mica placed at forty-five degrees revolved like a well-worked machine. They argued at the cost of their sense. The potash-bulb tube came to silence them. The tube in its ordinary state will not allow passage to the electricity. When the potash bulb was slightly heated, the absorbed matter was immediately thrown off. Electric discharges found their way from the negative to the positive pole. That was the triumph of science.

The experiments of dia-magnetism shown by you had a peculiar fascination. Light could not pass through a glass cube, placed between the two large coils of electro-magnets, forming the two poles, as they were not electrified. The narrow passage reserved for observation through the two coils was all dark. Every thing was ready to send the electric current. The Bertins's commutator was connected. The electro-magnets were surcharged with electricity. There flashed the light placed at the other end of the apparatus, to admit its rays through the glass cube. Why, the whole molecular condition of the glass cube was changed, though unobserved. The current was disconnected. The light disappeared. Yes, my eye was there all the while on the one end of the narrow passage through the two electro-magnets, and the light was on the other end. Again the

commutator allowed the passage to the electric current. Light reappeared through the glass cube. The opaque glass cube which does not ordinarily admit the rays of light becomes transparent, being placed between the two electro-magnets. The impenetrable cube admits passage to light by the force of electric current. This is marvellous. That gives enough food for reflection. Can the rocks change from the opaque condition to transparency ?

Aye, the conversion in nature is such. Opaque, semi-opaque and crystallised conditions of rocks are seen in the same place. There the change is gradual and lasting, after the molten condition of the rocks. Here the transition is sudden and that is too transient. The inference will not be wrong if the evolution of rocks is ascribed. Why, the metamorphic rocks show a characteristic evolution.

Darwin's evolution and natural selection could not create an enthusiasm in you. Herbert Spencer was rather your guide than Darwin. The loss of connecting link between man and ape was a serious fault. The *Pithecanthropus erectus* could not claim from you the consideration of a connecting link. You rather believed with Virchow and Agassiz that each class of animals was created by God, as God alone could create them. You were with the majority of the German philosophers in your belief of the creation of species.

Ah, there was that chaotic darkness before the creation ! It was a condition of potentiality of matters. The manifestation of creation could only come out of that potentiality in the event of its being transformed into kinetic energy. Was there a conscious ego, who did it ? Or, was it the self-transformation of that potentiality ? The conscious ego was to you an invulnerable ground than the vulnerable self-transformation. Your ardent belief in one God, the god of gods, was your *terra-firma*. That faith resuscitated your powers to the end. To you, it was not a belief, but a proven fact.

The Brahminic theocracy could claim little indulgence from you. Living in the society of Hindus, you had to tolerate their vain prattlings of sordid gain. It is a mockery how all of them claim their uncontaminated birth-right from the Rishis. What an unfortunate event it is that Bengal has no other castes besides those of Bramhins and Sudras. Kshatriyas and Vaishyas were all

forced to be Sudras by that egotistic school—the fallen theocracy of Bengal. They could retain their purity in this province but the others could not. Such a vain and selfish assertion is rarely seen.

You asked, Babu Golap Chandra Sarkar, Shashtri, whether is it possible to reform the Hindus of Bengal from a Hindu standpoint? His opinion was that there is nothing in the Shastras which prevents intermarriage among Sudras. The modern aspect is changed. Most of us are reluctant to admit that we are Sudras. The position of Kshatriyas is claimed by many; that of Vaishyas by a few. We are on the eve of a social revolution. Most of our people believe in superhuman faculties. They do not like to study the natural laws. They have almost always a morbid appetite to digest unnatural things. They do not observe that discovered and discoverable facts by patient research are human. Incantations of worthless words can create a way for stupid amazement. They will not smooth our path for our many struggles. The poverty of India is showing disastrous signs. The study of science with a view to its application to agriculture and manufacture is the only way to our material salvation. How ardently you wanted to place science on a broad basis, so that we can attain the rank of a nation and unite all India in one mass of solidification. Regelation of divided ice is an accomplished fact. The old quarrel of precedence between science and industry has not altogether ceased. The stormy days of the Indian League cannot be forgotten. The revivification of the old machines and implements for industrial purposes would have been a disaster to India. The newest phase of science with the newest apparatus can support us to reassert our lost position. Hand loom has lost its influence to give birth to the majestic Powerloom. Iron and coal are the bases of that grand power. It is not the workshop of a dozen of men that can defeat a trading antagonist. The large factory of thousands and tens of thousands can help us in our manufacturing enterprise. India can no more be a field only for raw materials. The manufacture of articles must be with us and they should be the product of our factories.

The power for competition and success can only be derived from the proper study of science, and scientific appliances.

Oh, Sircar ! how zealously you explained, elucidated, and exemplified our future way to form a consolidated nation. Our orthodox, narrow men were loath to accept your views. They now see the way to prosperity. The ruined country can now hardly afford to accumulate sufficient fund for his future welfare. Adversity has emasculated us to a degree which makes it difficult to regain our lost power for exertion.

Our unfortunate position has been enhanced by so many divisions and controversies in any useful action. All our Joint-Stock companies have proved failures. From the Union Bank to the Provincial Railway, inaugurated by men of light and leading, all have failed. There is one narrative of dreadful loss. The directors, honest or dishonest, can claim no sympathy for their bad achievements. Cool calculation and honest safe-guards were beyond their comprehension. The poor middle class who generally entered into these enterprises suffered the most. Can it not be said that these directors and managers sacrificed the good name of a nation. Reliance on the schemes of future projectors has become a doubtful and suspicious affair. Oh, Sircar ! How you felt your loss from one of these companies. You could hardly believe many of your own prominent citizens.

The old Indian philanthropy and charity created many educational institutions. The old Hindu College was a product of the gifts of Bengalees. Alas ! it could not be maintained by them. It was transferred to the Government for management. The Indian Association for the Cultivation of Science exhibits its honour as a token of Indian philanthropy. It is still managed by Indians. Its future is enveloped in dark gloom. Any speculation is in vain. Oh, dear Sircar ! Will you tell us, how far its existence is secured ? Your hope, your aspiration, I may say, still rest with it.

With what happy hit the resemblance of the action of thermo-electric currents with that of homœopathic medicines was explained by you. The thermo-electric couple consisting of the twisted ends of a copper and an iron wire was the simplest apparatus. The current produced by the red-hot state of the twisted end diverted the needle of a galvanometer in a certain direction. The white-hot condition reverted the needle in the opposite direction. The massive dose of medicines acts like the red-hot state ;

the white heat can be said to resemble the action of the homœopathic medicines. That difference is the distinction between Geisler tubes and Crookes tubes. The opposite polarity of action explains antipathy and homœopathy. Antipathy ordains its passage through the positive pole; homœopathy disdains to travel through that way. It takes the negative pole or the opposite path. The analogy is with striking resemblances. Sometimes analogy is akin to proof.

There are physicists among us who claim great knowledge and discoveries. Is there any one to whom the truths of medicine and physics revealed with concomitant force on a durable basis? You grasped and digested the facts of biology, medicine, and physics. The physical and chemical changes are not enough to explain the biological metabolism. The ions of homœopathic medicines operate in a way which cannot be well explained in the present state of our knowledge. The laboratory experiments on medicines cannot elucidate their action in the human system. The experiments on lower animals generally pervert and divert our energies. The best way to know the actions of medicines is by provings and reprovings in different countries and races, based on modern science. The only way to know thyself is to study the nature of man in relation to that of the lower animals. You propounded these facts and insisted for their adoption.

A survey of the action of homœopathic medicines made you an earnest believer of its many-sided truths. Those medicines should be reprovèd in the Indian soil. Then and only then, an almost unfailling application is possible. As a Nationalist, retaining your plain and ordinary dress, you were always anxious that our drugs, identical or bearing a similarity with the homœopathic medicines of the West, should be prepared in this country. They could only be used on the basis of their provings. Several tinctures and triturations were made under your direction.

In your early days, you made several experiments on lower animals to know the action of serpent poisons. Your experience of the cobra poison has contributed great facility to administer its dilutions in cases of cholera with success. But you were never satisfied unless its provings could be made in this country.

Oh, our king, our hero ! If I can write volumes to describe your inertia of motion, it will not be equal to the labour you performed. Potentiality had lost its charms with you, Kinetic energy was your favoured domain. Ah, after all, you have left us, forsaken us, never to reappear ! We cannot call you dead. Your living presence we feel. May your blessings reach us from that unknown region, in which perhaps you live, and for which you had that earnest longing.

EDITOR'S NOTES.

Monarchs as Medical Advisers.

King Edward VII, as we are all proud to know, has been graciously pleased *intrare in nostro docto corpore*, and is a Fellow of both Royal Colleges in England. Though His Majesty is, as far as we are aware, the only monarch who has honoured the profession by consenting to be formally enrolled in its ranks, there is at least one precedent in the list of English sovereigns for the sympathetic interest which he has always shown in medicine. Froude says that Henry VIII was one of the best physicians of his time; with regard to this, however, any one who knows what physicians in the sixteenth century were like would be justified in saying with Othello, "That's not much." Charles I took an intelligent interest in the discoveries of Harvey, and Charles II, although he played tricks on the Royal Society, found relief from the boredom of politics in scientific experiment. The frequently repeated statement that the Queen of Portugal is the possessor of a medical diploma was officially contradicted in the BRITISH MEDICAL JOURNAL on Her Majesty's behalf some years ago, but at least two scions of royal houses at the present day have studied medicine and taken their degrees in the same manner as ordinary mortals. His Royal Highness Duke Theodore of Bavaria is an ophthalmologist of note, and although the vast and varied wardrobe of the German Emperor does not, we believe, include the robes of a Doctor of Medicine, it is understood that before he ascended the throne he made a special study of throat diseases under a very distinguished master, and he may therefore claim to speak with some authority as a laryngologist. The great Napoleon was fond of gibing at his physicians; but the fact that he himself on occasions gave medical advice seems to suggest that his contempt for them may not have been altogether free from professional jealousy. We are indebted to Dr. Comenge, of Barcelona, for the discovery of another royal unqualified practitioner in the person of Martin the Humane, King of Aragon. In our excellent Spanish contemporary, *Revista de Medicina y Cirugía Practicas*, he gives the text of a letter written by that monarch to his eldest son, the King of Sicily, under date January 28th, 1409, which is preserved in the archives of the crown of Aragon. The object of the letter is to impress on the King of Sicily the need of precautions for the preservation of his health. In particular he is enjoined to drink water only after it has been boiled and allowed to cool. He is also urged to take certain pills which his royal father sends him in a box; the pills are to be taken on such days and in such manner as Master Pere Soler, "our faithful leech," shall consider necessary according to the meteorological conditions prevailing in Sicily. The use of water sterilized by boiling for drinking purposes was recommended by Hippocrates and by other ancient writers. In the Middle Ages it was employed by surgeons, notably by Guy de Chauliac, in the washing of wounds with

the view of preventing suppuration. The pills sent by King Martin to his son appear from another document discovered by Dr. Comenge in the Barcelona archives to have been those known at that day by the name of Rhases, the famous Arabian physicians; they were purgative in character, and had a great reputation as preservatives against many diseases.—*Brit. Med. Journ.*, January 9, 1904.

The Emission of Blondlot Rays by Nerve Centres.

Professor A. Charpentier has continued his researches on the emission of n or Blondlot rays by active nerve tissue. The nerves and muscles of the lower animals emit n rays even more actively than those of man. The frog serves admirably to demonstrate the fact. Its temperature at this season can be kept considerably lower than the room temperature, and even then the general laws of the emission of n rays are not modified. The n rays and all similar rays emitted during physiological action act on all phosphorescent bodies. They increase even the luminence of the noctiluca and phosphorescent bacilli, such as photobacterium phosphorescens. Speaking generally, solids subjected to mechanical pressure generally emits n rays. A tendon—tendo Achillis, for example—does not cause any increase in luminosity of the test object when its attached muscle contracts. The points of insertion of the tendon, however, and the bony points of attachment of the tendon do emit rays copiously during muscular activity, which subjects them to tension and pressure. The tendons themselves contain few nerves, while the points referred to contain many nerve endings, and their presence seems to explain the emission of radiations. Compression of a nerve considerably increases its power of brightening luminosity, both above and below the point compressed. If the compression is prolonged the radiation from the nerve diminishes. Perhaps the most interesting observation is the physiological emission of n rays by the nerve centres. The whole spinal cord increases the phosphorescence of the test object, and the effect is greater opposite the cervical and lumbar enlargements of the cord. If the person examined contracts his arm, the effect is expressed in greater activity of radiation of n rays in the cervical enlargement of the cord. It increases also from the cord to the brain. If the muscles of one arm only are contracted the illumination is increased most on the same side of the cervical enlargement, and higher up the effect can be traced on the opposite side, where the nerve impulses cross. To study these radiations straight tubes of lead 5 to 10 cm. in length are used. One end is applied over the nerve centre; the other end contains a small piece of wood or card covered with a phosphorescent sulphide. M. Charpentier was able even to localize the so-called "motor-centres" of the cerebrum by the rays emitted when they are called into action. Even the centre for speech in the region of the third left frontal convolution was found to emit more n rays when the person spoke either in a high or a low voice. In right-handed people there was no corresponding action of the right frontal convolution. It seems that even the act of attention or mental effort is attended by the emission

of rays, which increase the phosphorescence. Other centres, for writing, movements of arms, and sensory nerves behave similarly. Thus it would appear that all nerve centres in action give off more n rays than during repose.—*Brit. Med. Journ.*, January 16, 1904.

Therapeutics of Cataracta Senilis.

Dr. Parentean's fifteen years' experience leads him to emphasize the following remedies :

Cannabis Sativa.—Cataracts following nervous disturbances. Psychic degradations or eccentricities of character. Abuse of tobacco, alcohol. He is deeply depressed and fears imminent blindness.

Causticum.—Cataracts in patients with a past or present history of locomotor disturbances, either of paralytic or convulsive nature.

This remedy accomplished remarkable results in three patients, two being afflicted with hemiplegia (cerebral hæmorrhage), and the other with a painless facial spasm. A dimness, grayish in color, irregular and ill-defined, had spread over both eyes.

Cineraria Maritima.—Deemed by himself of unreliable worth, and apparently indicated in traumatic cataract and that following laceration of the zonule, where it may act favorably. The cataracts are whitish, scattered about and accompanied by very rapid obscuration of vision.

He uses this remedy in massive doses, 4–8 drops of θ , within twenty-four hours, and preferably by instillation.

Conium Maculatum.—Like 'cannabis sat., adapted to nervous, depressed persons. He recalls the case of a hypochondriacal oculist with incipient cataract. As long as this remedy was given the cloudiness disappeared, only to recur at once on its withdrawal or alternation with another remedy.

Ledum Palustre.—Especially adapted to gouty persons. A patient under his care developed an irido-scleritis of gouty nature, and simultaneously a cloudiness of the lens. Ledum, prescribed for the former condition, to his great surprise, also markedly improved the latter. Subsequent results attest to the efficiency of ledum herein.

Naphthalin.—According to toxic effects, this remedy appears well indicated. Transient improvements only were observed, and he is aware of no special indications for it.

Magnesia Carb.—This remedy has rendered him good services in women afflicted with uterine or climacteric disturbances; likewise persons debilitated by severe diseases (cancer, syphilis, gastric or hepatic affections, etc.). Emaciation is marked; the skin earthy, parchment-like. Two cases of struma exophthalmica, with cataracts, improved encouragingly under the use of mag. carb.

Natrum Mur.—This remedy, like secale, is regarded by Dr. Parentean as his fundamental remedy. He relied implicitly upon these two in incipient senile cataract, given either alone or in conjunction.

He gives no special indications, simply mentioning the cataracts to belong to the category of simple senile scleroses, without any deeply

underlying constitutional defect or any preceding injury of the structure of the eye. The appearance of the cataract is typical ; it commences at the periphery with radial and distinct, though irregular, streaks. Vision remains comparatively fair, especially in good light.

Phosphorus.—An admirable remedy in patients with albuminuria, diabetes, heart disease, when hæmorrhages have occurred within the choroid and retina ; the opacities are more central than peripheral, and accompanied by visual disturbances, aggravated by good illumination. A case occurring in an aged, gouty, hæmorrhoidal patient, giving no response to ledum, improved speedily under phos. selected for repeated protracted epistaxis.

Sécale Cornutum.—Secale, like natr. mur., presumably accomplishes the best results in cataracts, where the crystalline lenticular dimness is dependent upon diminished interfibrillary fluidity here restoring the volume to a norm of fluidity. Furthermore (like magnesia carb.), it seems to act preferably in women with post-climacteric uterine disturbances. Differentially, natr. mur. is called for by contracted pupil whereas secale presents dilated pupil.

Senega has found practically no use from his hand, while, on the contrary.

Silica has been frequently employed by him. The indications are : Cataracts occurring in desk workers, literary men, who have become "run down" by laborious, persistent work, or, if engrafted, in a naturally weak constitution. The head feels heavy, attended by weak memory for words, vertigo, tinnitus aurium, gastric disturbance, hæmorrhoids and gouty symptoms at times ; so, also, hectic fever in evening or night. Usually the pupils are contracted ; photophobia was noted in several cases.

Sulphur.—This remedy apparently sustained the action of natr. mur., especially in persons of scrofulous diathesis, with a history of cerebro-spinal disturbances, tuberculosis or uterine ailments. The general condition seems to be malnutrition.

Tellurium.—Cataracts following diseases of eyes ; irido-choroiditis, glaucoma, retinal detachment, hæmorrhages, etc. He claims this remedy to possess special values as an absorbent of the infiltration in the iris and choroid, and thereby increasing the vitality of the lens and favoring retrogression of incipient cloudiness of lens.—Quoted from "Allgemeine Homœopathische Zeitung" by—*Hahnemannian Monthly*, January, 1904.

CLINICAL RECORD.

Indian.

A CASE OF BRONCHITIS WITH HIGH FEVER.

UNDER DR. AMRITA LAL SIRCAR, L.M.S., F.C.S.

Reported by BABU PRIYA NATH BOSE.

A Hindu male child aged 6 years had some functional derangement of the liver in the month of December, 1902 for which he was placed under the old school treatment. In the course of this treatment he had an attack of fever of a double quotidian type; then the temperature did not rise more than 102°F and it used to come down to normal. He was better during the months of February and March 1903.

On the night of the 8th of April he was attacked with fever with fully developed catarrhal symptoms. On the 6th of April he took a cold water bath and complained of ear-ache during the night. The family physician was called in on the morning of the 9th who detected bronchitis with fever and gave a liniment to be rubbed over the chest and a mixture to be taken every 3 hours.

The temperature was taken regularly every 3 hours, and it rose up to 104° once at midday and again at midnight. There was a frequent cough, sweat during heat, thirst for a large quantity of water and delirium during the night.

10th April morning. He visited and declared the condition of the lungs better but detected congestion of the throat with tonsillitis and weakness of the heart and feared an eruption. Ordered the mixture to be taken every 3 hours, and 30 minims of vinum gallici to be taken if there be much perspiration, and gave another application for the throat.

10th April	1 P.M.	104.8
	4 P.M.	104.8
	6 P.M.	102.6
	9 P.M.	101
11th April	1 A.M.	104
	6 A.M.	102.6
	9 A.M.	102.2

This record shows that there was no improvement as regards the temperature; the cough and other symptoms were same as before. No stool. Their physician visited and ordered the same medicines to be continued. The temperature maintained throughout 104°F.

Other symptoms, were just the same. Congestion of liver was detected. No stool.

A pill to open the bowels was ordered in the evening and the following mixture was prescribed to be taken every 3 hours, a dose of which contains the following.

Liqr ammon citratis	ʒi
— Cinchona Hydrobrom.	ʒii
Syrup Althae	ʒx
Ammon Murias	gr. i
Spt. Ether Chloric	ʒiv
Tinct. Strophanthus	ʒi
Aqua Anithi	ad ʒiii.

12th April. The temperature varied during the day as follows :

1-30 P.M. 104.4

4 P.M. 103.6

Bowels moved once during the day. The consulting physician after examining the patient declared the case to be of malarial origin and ordered the following medicines to be taken every 3 hours.

R. Liqr Ammon Citratis	ʒi
— Cinchona Hydrobrom.	ʒii
Syrup althae	ʒx
Ammon Murias	gr i p
Spt. Ether chloric	ʒiv
Tinct. Strophanthus	ʒi
Liqr. Strychnia Hydrochlor	ʒi
Aqua Anithi	ad ʒiii

Mix for one dose.

12th April	R. Hydrarg. Subchlor	gr i
	Pil Rhei co	gr ii

One pill to be taken once in the evening and another in the morning. The following is the record of temperature after these medicines : bowels moved twice during the night after administration of the pill.

8 P.M. 103.6

10-30 P.M. 103.4

13th April 12-30 A.M. 102.2

4-30 A.M. 103.

6-30 A.M. 102.2

8-30 A.M. 102.8

10-30 A.M. 103.2

1	P.M.	104.
3	P.M.	103.
5	P.M.	102.8
9	P.M.	103.4
12	P.M.	102.6

A change of treatment was contemplated and I took up the charge of the patient and called in Dr. Amrita Lal Sircar for consultation.

We noticed the following symptoms : Constant thirst, constant cough with expectoration of whitish mucus. Tongue furred, heavily loaded with brown coating. Desire for ice. No congestion in the liver, slight bronchial rales were detected on the back. Heart slightly weak, pulse weak, prostration and no stool on the 13th. Dr. Amrita Lal prescribed Ars. 12 and told me to give it at the falling temp. but to give a dose of placebo when the fever will rise.

	10	A.M.	Ars. Alb. 12 one dose.
Temp.	1	P.M.	103.4
	4-30	P.M.	102.4
	7-15	P.M.	102
	9	P.M.	101 one dose Ars. A 12
14th April	11	P.M.	100.2
15th April	2-30	A.M.	100
	7	A.M.	99.6 °one dose Ars. Alb. 12
	10-30	A.M.	98
	1	P.M.	97

This subnormal temperature continued throughout the day. The cough, prostration, thirst and all other symptoms subsided gradually.

16th April, no medicine ; passed a well formed stool, took bread and milk and relished his food ; got back usual appetite.

17th April, no medicine ; stool healthy and no complaint except perspiration and subnormal temperature.

18th April, no perspiration.

19th April, doing well.

21st April, declared cured.

Gleanings from Contemporary Literature.

SOME THOUGHTS CONCERNING THE PRINCIPLES OF DRUG MEDICATION.

BY EDWARD E. SNADER, M.D., PHILADELPHIA.

(Read before the Hom. Med. Soc. of the State of Pennsylvania,
September, 1903.)

WHEN the world was still young drugs were administered for the cure and amelioration of disease conditions. There was something instinctive in these efforts to use drugs for the modification of maladies, and, being thus apparently suggested by an instinctive impulse, it seems more than likely that there was underlying truth in the self-born supposition that the fruits of the soil and the mineral ingredients of the earth existed for some other cogent reasons than were ordinarily evident to the eye and the commoner experiences of every day life.

Since the dawn of time the administration of the medicaments we call drugs has had an empirical, that is to say, an experimental, basis; and the use of drugs to this day, no matter how refined may be our imaginings to the contrary, are nearly as empirical as when the first herb was employed for therapeutic purposes. Much of this empiricism exists of necessity, and it will continue to exist until we know more of drugs and the principles that govern not only their administration, but also the supposed methods of their actions. Even in the glare of the nineteenth century's progress, and the golden dawn of the twentieth, we almost unconsciously assume that we are at the end of knowledge; that, practically, there is little more to be learned about drugs; and this unconsciously-assumed mental attitude, demanding, as it does, most obvious results from the administration of drugs, leads to scepticism in regard to the action of drugs. At present, therefore our only rule is empiricism; our only guide, clinical experience.

In this discussion I assume that drugs act. A cloud of witnesses, in the guise of deaths from poisonings, and the thousand times repeated results achieved in the sick-chamber, are sufficient attestation of the innate power of drugs. That they do not always act as we desire is altogether another story. My present contention is simply that drugs act, and that they are, properly handled, necessary in the treatment of certain diseases.

The old woman, with her herb teas, who gives her libations to a sick individual because she has found them serviceable, or has been told by her grandmother that certain plants were of service in certain cases, is more closely related to the modern empiricist with drugs than either the ancient lady or the modern doctor dreams of. The physician, it is true, is more scientific, and has a wonderful advantage in his side knowledge and he has a more accurate, even if still imperfect, knowledge of drug powers and of the conditions to which he wishes to oppose drugs, and yet, nevertheless, at present, every drug prescription is an empirical one. Some

prescriptions are less empirical than others, but all are, to a greater or less extent, chargeable with being tinctured with experimentalism. Much of good has come down to us from other days from this lay and professional empiricism; but we have not held fast to that which was good, certainly not always to the extent that should have characterized a profession who must recognize the fact that medicine is not, and, in the nature of things, never can be, an exact science. Many therapeutic pearls without price have been lost to humanity through carelessness in observation and through lack of ability to properly observe the effects of drug medication. This point is true, no matter upon what supposed principle or ism drugs were administered, whether upon the so-called antipathic, homeopathic, isopathic or eclectic, or upon the dictum of some dead and gone dogma whose tenets are forgotten.

The most potent reason for the failure to hold on to that which was good was and is that the medical profession is on the lookout for specifics for named diseases. A search for specifics is not only irrational, but impossible of achievement. There will never be a time in the history of medicine, present or to come, when it will be possible to cure or ameliorate every given case of a given curable disease with one drug or one combination of drugs. It is this search after specifics that is doing more to prevent genuine progress in medicine possibly than any other one single factor.

If we would be successful prescribers of drugs in the treatment of the sick, we must recognize two important and (I think) self-evident facts. The first of these facts was given due prominence by Hahnemann, and is practiced, more or less consciously, by every practical physician, namely, *individualization of the case*. It seems to me that no one at all acquainted with clinical medicine will deny the utility of such individualization, and yet it is this idea of taking the individual into consideration, as well as the disease from which he is suffering, that gives the death-knell to the search for universal specifics. We may and ought to, however, search for specifics for morbid conditions; if we do not for named diseases. This theoretic consideration, of course, will not prevent the clinician from first employing that drug treatment in a given named disease which has, in the vast majority of cases of named disease, proved valuable; but with the distinct understanding that the drug is not to be blamed if it fail to give us the results we have obtained in other apparently similar cases. If we are to be of real service to our patients in the sick-room we must be practical; but we should be quick to recognize the reasons for either the failure or success of a given drug prescription in a given kind of case.

Another very important conception should always precede the administration of a drug. We must have some sort of an idea of what we intend to do with the drug, a working hypothesis, rather than a vague general notion that we want to cure. We must try, then, to know in what particular, or, if that is not possible, in a more general way, by what route, we expect the cure to be wrought. We must have some conception of what particular thing we intend the drug to do. The only possible man-

ner in which a drug can act (and this is the second fact, next to the individualization of the case, that must be apprehended by him who would successfully and intelligently apply drugs), for either good or ill, when administered to the sick or well, is by virtue of the inherent power *modifying the function of the cells*. All therapeutic endeavours whatsoever called by whatever name, given under whatever guise, have this one property in common, the ultimate anatomical element, *the cell*, must respond to the stimulus of the administered drug or other therapeutic procedure, or the cells must resist the action; that is, the system, as we call it, a congeries of cells, reacts against the introduced medicament (when a drug is employed therapeutically) and its specific influence over the cells. It matters not whether the introduced action be chemical, bacterial, balneological, electrical or nutritive, or whether the treatment is local, special or general, or surgical, every medical procedure depends for its efficacy (or even its failure) upon its ability to destroy or *modify the function of the cell*. If this proposition be admitted, it follows that disease, so far as we are practically acquainted with it, is a series of morbid phenomena dependent upon an alteration in cell function; and in order to determine, so far as possible, the nature of this alteration in the functions of the cell, we must make a diagnosis, of conditions, at least, even if we cannot at the time name the disease to which the disorder of functions symptomatically belongs. When we have made the diagnosis we obtain an idea of the pathology of the case (where the pathology of the malady is known), and this knowledge, furnished us by pathology, tells us in what manner the normal function of the cells has been interfered with by disease. We are thus often placed in a position to know in what manner we can alter cell function, in order to bring back normal function, if possible, and, if not possible, in what manner we can so affect the functions of the remaining healthy cells as to bring back partial health, or, that failing, if we can call on other cells not so profoundly affected to carry on the work of the disabled structures, a vicarious state of affairs that must occasionally take place, if we are to believe the stories told by our examinations in the dead house. So overwhelming are these revelations of the pathologist's knife that, in some instances, we cannot conceive, with the profound cell alterations shown on the post-mortem table, how life could have been so long prolonged save upon the theory of a partial vicarious cell action.

Pathology has been an unquestioned boon to medicine, but we must not consider that the science pathology is complete or final, for it is not. We are even now, with all the great work that has already been done, on the threshold of a vast field of knowledge that will come to us as a profession with the further development of this science. But, with all the advances that it will be possible for pathology to make, with new instruments of precision and the still further development of the wonderful studies that are now going on in this inviting field, it is self-evident that there are some things about disease, no matter how great its development, that pathology will never be able to tell us. Pathology of necessity deals only with the

material side of the question of disease phenomena. There is something I wot, beside what we call material in this wonderfully-made body of ours. A man is a splendid congeries of cells, with an extraordinary and almost inconceivable play of diverse, yet harmonious, functions. Yet those cells, without what we call life, are naught but a shadow of shades, a dream-like empty temple. A congeries of cells is man, but man is more than a congeries of cells. The force we call life uses the congeries of cells to act through, to shine through, as it were. Mayhap this life force is from eternity to eternity. Certain it is that the life force plays through these cells, and vivifies and works its will through and by them, possibly like a great stream of light shining through a many-hued window. For the purpose of illustration, we say that some cells may have the function of reflecting only certain kinds of light, and when there is a failure to transmit the proper color, owing to changes in the structural function of the cell, pathology can tell us the character of the change that has taken place that prevents the transmission of the function, but it cannot tell you (or it can only guess) the change in the life force itself that formerly used particular group of cells to perform a certain function. Pathology only knows that the cell is not what it was, and that if the cell undergoes further, so-called, organic change, it will no longer be able to perform its function of acting for the life force; but pathology cannot affirm that because the cell is destroyed, therefore, the life force that animated it is also destroyed. It can only say, in relation to the life force, that it is dying or dead. You may call this life force, this higher force, if you wish, simply a more exalted form of matter (in contradistinction to the term spirit), but at that such an assumption remains unprovable, and hence we can only be sure that anything, save certain of the phenomena of the higher material force (if so it be), is not within the ken of human knowledge, and hence is outside the domain of the possible discoveries of pathology. There is, then, something about disease that pathology will never tell us. We can only justly ask her for more light in the sphere in which she can give us light. Most reasoning about pathology mentally assumes that the present discoveries are necessarily correct, when our real attitude towards these discoveries ought to be tentative. We see the light, but we can only guess as to its nature. The sun of discovery may guild a new mountain top and leave the hill of yesterday in the shadow for ever. We are simply studying material pathology. Pathology tells you which cog in the life machinery is wrong, but it cannot tell us about the life steam that runs the engine. We study pathology, too, in order not only to discover tissue alterations, but the better to understand the symptomatology of disease; and the information in this line has been monumental and epoch-making for medicine; but pathology cannot point out to us (perhaps) the changes that take place in cells as the result of the emotions, the truest feelings, the keenest consciousnesses of life. Where, pray, and in what cells, in what tissue, shall we be able to discover the pathology of fear? of anger? of horror? of joy? of despair? Where is the anatomical seat of instinct? A blood-

vessel may swell, a face may pale, or grow red; but these phenomena are only the outward signals, the manifestations, but not the real change that takes place in the cells, if these actions are evolved by the direct mechanical action of the cells. Yet we are quick to recognize the emotions as potent causative factors of disease. We know in what part of the brain are seated certain cells that apparently have to do with certain mental operations we call thought. But whoever saw a thought? We can see only its effect. Changes in the muscles of the face show fear or joy, or indifference. These are the outer showings of thought, which may have a dwelling place in the brain cells, but we cannot say just where. We only surmise that thought, so far as we know, uses the brain as an instrument. Think a morient of the insane, and the impossibility often of determining the lesion that shuts the sufferer out from the light of reason and love, and makes him apparently lower than the beasts of the field. What is the pathology of essential insanity? Are we not of necessity, then, shut out from the acquisition of very important knowledge, not by the fault of pathology, but by the limitation of our powers in the investigations into the unseen and unseeable mystery that lies back of the visible machine made up of the congeries of cells we call man.

And it is this intricate machine that we, as physicians, try to restore to health by the administration of drugs. Is it any wonder that drugs fail sometimes? Is it wise to demand that this intricate machine yield to your crude touch as if that touch were a wand of magic? Considering that we, with all we know about medicine and its co-related branches, in reality possess little working knowledge, have we any right to be sceptical about the action of drugs? Have we even a right to affirm very strongly that they act at all? Yes, we have a right to assume that they act, that is, that they can produce alterations in the functions of cells, because that fact is demonstrable by observing certain phenomena, and because we know that other inorganic substances affect cell function. The trouble with most of us is, that we want the drugs we administer to act after a manner that we have preconceived they should act.

All schools have a right to an existence, for there is much of truth in all. Do not let us tear our clothes and weep in sack cloth and ashes because our particular pet theories are only, to a certain extent, applicable. We are not yet at the end of knowledge in medicine. We are babies, sucklings. We need not worry whether this or that theory prevails. We cannot but believe that, in the end, no matter who wishes to the contrary, the truth will prevail. The truth will prevail, the "eternal years of God are here." Our plain duty is to add to the general knowledge of the profession of medicine all that we can, in every possible way, so that her great mission, the helping of suffering humanity, will be the better fulfilled. For the glory of the noblest profession on earth, let us be the evangelists who shall proclaim that the good of humanity is our only aim, and not the exploitation of any particular creed or ism, but truth, and truth only.

The administration of drugs for the cure and amelioration of diseases.

ed conditions is a very important part of our work as physicians. Many attempts have been made to explain the mode of action of drugs, and the manner in which certain phenomena of disease are made to disappear or are modified. Viewed in the light of our present knowledge of disease and the manner of drug application, is there not more than a modicum of truth in every system? Or are these modifications but crude outgrowths of an underlying principle that has not yet been shown? The two most prominent of these many methods are the so-called homœopathic and the so-called allopathic. Are not these two systems, in many respects, essentially the same? Let us see if there are reasons to believe that there is a mutual foundation for both practices. Both methods are empirical, and will be until medicine is an exact science. We never know when we give a drug whether it will act or not, nor do we know what will be the extent of its effects until we have observed its action or lack of action. Therefore, the administration of a drug, given on any supposed principle of action, is empirical, that is, experimental. I think it will be conceded that when a drug that is active is introduced into the economy it must modify the cells of the body or some particular group of cells. We can only expect to achieve our results by modifying cell function. We stimulate, we depress function, according to our ideas of what particular modification in the morbid action of the cells we wish to change in our efforts to bring about a cure or an amelioration. I believe that *every drug along the plane of its action has the power to produce two diametrically opposite states in the function of cells.* This power is somewhat dependent upon the size of the dose and upon the idiosyncrasy of the individual. These two effects are not always produced, because it is not desirable to do so, because the drug is discontinued, or for other more or less obvious reasons. My contention is simply that drugs have always the power to produce diametrically opposite effects, the two convexities of a circle, or the two ends of a plane. Whether these two effects are produced by the drug itself, or one effect by the reaction of the cells against the drug impulse, I am not prepared to say, nor do I think it essential, for my present purpose, that the manner of production of these two opposite conditions be established. The fact, if it be a fact, is all I need for my object. It seems to me that there is an abundance of evidence to prove this dual, or more than dual, action of drugs, in the almost daily instances that come under the eye of the observant doctor. Think of the tonic first effects of quinine and the ultimate depression; of the stimulant effects of strychnia, its later tetanization of the spinal cord, and the subsequent relaxation; of the primary slowing of the pulse of digitalis, and the later quickening; of the sedation of pain with morphia, and the sequent torturing neuralgias; of the primary stimulation of glandular activities of the iodides, and the later atrophy of the glandular structure that was stimulated; of the primary tonic effect of arsenic, and the subsequent blood degeneration. Instances of the dual action of drugs could be multiplied almost indefinitely. Drug affinities for certain groups of cells form guides for the selection of that drug when those organs are at

fault; but when used for the cure of disease it is for the purpose of modifying the function of the cells for which the drug has affinity. Is not this dual action of drugs the real basic principle upon which drugs are best prescribed? Hahnemann scented the truth of the dual action of drugs when he proved them upon the healthy and then used the symptoms that indicated drug-action for the purpose of prescribing. Did he not miss half the truth with his symptomatic prescribing? Are we not robbed daily of the fruits of clinical experience by a too strict adherence to the method of merely symptomatic prescriptions alone? Is not this method only one-half the truth, and illy expressed at that? Symptoms of the subjective sort show that the cells are modified, but they only show us one side or an angle of the drug picture. Proving, as it were, show us the dress, but not the real being beneath the habiliments. Has not homœopathy, by a strict adherence to symptomatic prescribing, defeated most of the ends for which it has striven so strenuously? Undoubtedly, it is an effective way of prescribing drugs, but it is not always the most effective. Where known, the pathology ought always be taken into consideration in a prescription. The pathology suggests the manner in which drugs are capable of altering, or can be made to alter, cell action. I do not decry symptomatic prescribing. I wish to amplify it. We must have provings for objective, as well as subjective, conditions. The symptomatology gives us the emotional side of the picture. We must know both symptomatology and pathology. We must prove drugs in the way Hahnemann did, and then supplement those provings with all the investigating means furnished by modern methods. The blood, the secretions, the excretions, must be examined. We must know all that a drug can do, irrespective of any theoretic considerations as to how it will act, *i.e.*, according to what principle. But we must have the provings for symptoms, for without them we cannot have the lights and shades of drug-action. Many of the symptoms produced by drugs are of such a character that they cannot be referred to any mere pathological change now discoverable. A drug may dip down into unknown depths and betray an action that cannot be explained upon the theory of an anatomical alteration in the cells. A drug, it is possible, may touch that life force which is so elusive, and may go through the skeleton of cells, as it were, into the subconscious life, and act upon centres of which we do not as yet dream. We may say, because we do not know better how to describe it, that a given drug acts upon the sensorium. Whence those properties of drugs, like that possessed by *cannabis indica*, that produce such weird and unexplainable pictures of mental activity? Do drugs touch the so-called soul? What we call soul is certainly modified by other material influences, why not by drugs? Even if we cannot give a rational explanation for these phenomena, common or uncommon, the fact that they occur is a fact, nevertheless. Because we do not know the *rationale* of these symptoms we should not be debarred from making use of these phenomena when we employ drugs in the treatment of the sick for we know positively, at best, very little as to the real action of drugs,

and we know still less as to the manner in which cures are wrought by drugs when we introduce them into the body.

We must prove drugs on animals, and carry it to the lethal extreme. Otherwise we can only guess at some of the possible actions of drugs. No proving in man has been voluntarily pushed to the production of its ultimate effects, and hence there is no absolutely correct proving in existence. We have, therefore, all along been struggling with partially proven drugs, and we have been more or less successful in their employment, as has also every other school or system, according to their lights. More or less successful, I say, for men are not fools, even although they may differ in regard to many points in the administration of drugs. Schools could not exist for twenty minutes if there was not a rational, or fairly rational, ground for that existence; if they did not secure some apparently good results from the administration of drugs.

I do not deem it necessary here to combat the idea that suggestion, or hypnotic influence, is responsible for most of the results we think we secure from drugs. Such a position is worse than begging the question.

While, undoubtedly, the mind, or the influence of the mind of the doctor upon that of the patient, has much to do with certain kinds of success, it is not responsible for the undoubted drug effects produced upon the unconscious, the insane, or babes in arms, and we do not all have that wonderful influence over our patients that we can make a dropsy disappear over night by the process of hypnotization. If we could, we would not have to make night calls. We could hypnotize them over night, and make their colics take to themselves wings. If we could do these things by suggesting, I fear we could be justly accused of out-quacking the Christian Science brethren, with their one part truth and ninety-nine part error theory, and we could go into the "absent treatment" with a vengeance, particularly in such easy cases as uræmic convulsions, or such a piccadillo as a post-partum hæmorrhage; and immediately upon the administration of any old kind of a drug our rheumatic patients would, with smiles on their faces, take up their beds and walk, and bless us besides. At any rate, suggestion as a means of treatment, even if fairly successful, is not nearly so frequently useful as the giving of drugs, chosen with something like decent regard for the object to be attained by their administration.

It seems to me that we, as homœopaths, have failed to recognize the full significance of our supposed law of cure. It appears to me that there is one general law underlying this whole matter of drug administration. We have boasted about our law of cure without thinking much about the fact that there is *no such thing as a law of cure*.

Although we have, as a medical profession, been studying drugs for years we do not to a certainty know how any cure is wrought. The homœopath says he cures by substituting a drug disease for a natural one, while our old school friend says he does it by utilizing the physiological actions of his medicines. Both are partly right and both are partly wrong. Both are simply using words to make plain ideas that they entertain about how

a drug acts; but no one *actually knows how a drug acts*. It is administered, certain results follow, but seldom, if ever, can these results be traced to the *fons et origo*. If the homœopath gives to a case of simple fever, with a hard, bounding pulse, hot skin and anxiety, a dose of aconite, and the skin becomes moist, the pulse softer and the fever falls, he declares that his cure is wrought by the law of like cures like. Our old school brother gives quinine to his case of intermittent fever and his case recovers, and he says that it is because quinine is an anti-periodic, a protoplasmic poison, and that it destroys the plasmodia of malaria, and yet quinine cured intermittent fever before it was known that such a thing as the plasmodial germ existed in the blood of malarial patients. Drugs affect the function of cells, and certain of these results we see, or think we see, in the phenomena that follow the administration of drugs; but we do not, in reality, know in exactly what way this change in function is wrought, although we see certain alterations in phenomena, but these are the mere outer results of the inner workings of the drug. We cannot tell whether the action is chemical, electrical, nutritive, or what not. We classify drugs so as to indicate, in a general way, the outer aspects of their action. We say diaphoretics act on the skin; we simply know that certain glandular structures are more active and the skin moist after their administration, and we guess we know the action that is taking place in the cells, and in many instances, no doubt, our surmises as to the *rationale* of the action of certain drugs upon the cells is correct.

I have asserted that there is no such thing as a law of cure; that the so-called law of similia was a misnomer. The supposed law enunciated by Hahnemann is not a law of cure, but a *principle of drug selection*. The method of selecting a drug has nothing whatever to do with the law or method by which a cure is wrought. Have we not been mistaken in supposing that the administration of drugs according to the dogma similia was tantamount to the evoking of a law of cure? The cure is wrought in many instances, but not in all. We were led to the cure by the method of selection as practiced by the homœopath. The beneficent change was wrought by the manner of selection, but not by virtue of a law of cure, for symptomatic prescribing takes in but a small portion of the principle of similia that lies at the bottom of the selection. This principle of drug selection, wrongly termed a law of cure (and only partially employed by homœopaths to-day), is at the bottom of all drugs administered internally, no matter by what school. The law or rule of similia, properly understood, properly applied, is the greatest principle of drug selection it is possible to conceive of in the present state of our knowledge, and we, as homœopaths, have been recreant to our trust in that we have not fully developed it and shown to the world of therapeutics, not that medicine knows nothing of drug-prescribing, but that in the despised law of similia lays the secret of the fundamental principle that lies at the very foundation of all successful drug prescriptions in curable cases.

Do not tell me that the investigations into the origin of many diseases has shown that many maladies are the result of the ravages of certain germs and of their products, and hence we must adopt wholly new methods of treatment. Before you adopt that view, think for a moment. Is aconite less successful in the treatment of pneumonia now than it was when we did not know that the pneumococcus is the cause of the disease? Is veratrum viride any the less successful in lowering the pulse-rate? Is china, or its alkaloid, any the less capable of aborting a paroxysm of intermittent fever than it was when we knew nothing of the malarial plasmodium?

So far as I can see, all drugs, used by any school, that have at all a definite and specific curative relationship to certain diseases (or, if you say, to disease processes) show that, whether consciously or unconsciously, to the

I had or could produce a more or less perfect picture of the condition for which they were prescribed. We have thought that *similia* was a law of cure. I think it is a principle of drug selection. I do not detract, therefore, from the dignity of the so-called law, and it would not matter if I did, for we as physicians want to know the truth and nothing but the truth. Regarded as a law of selection, the field of its application is infinitely widened, and its importance, fully understood and appreciated, will lead to an entire revision of our methods of interrogating drugs as to their powers to modify cell function, upon which facts their ability to assist the sick solely depends.

I have frequently claimed that many of the so-called physiological drug-actions of the old school were exquisite examples of selection according to *similia*, and I have been met by the answer that I was wrong, forsooth, because the results were not produced in the so-called homœopathic way, but were due to the physiological action of the drug employed. My answer is that we do not really know how the alteration in cell function takes place, and that we only see the ultimate result, not the inner mechanism by which the result is achieved. I have said that all drugs have the power to produce two opposite states and conditions, either as the direct result of differing dosage of drugs or as the result of the reaction of the system against the influence of the drug, and that practically, whether as the result directly of the action of the drug or the reaction of the cells against it, the position that the opposite conditions and the intermediate states were produced, could be assumed as correct. This being true, the other proposition, that all known so-called specifics showed a similitude to the condition for which they were prescribed, is understandable. If we accept the necessity for proving drugs upon human beings and upon animals, in order to secure a picture of their possible action, it will be seen that the rule of *similia* is everywhere prevalent in the prescriptions of all schools. The old school man prescribes *digitalis* for a rapid, irregular action of the heart, because he conceives that it is this particular function in the heart he wants to modify, and he expects certain secondary effects to follow. The narrow homœopath who will not see that drugs have two ends to a plane of action, or rather a circle of action, any part of which is a certain phase of a disease picture, condemns the old school method as physiological, and then he prescribes his *digitalis* for a slow pulse, and finds that the pulse-rate quickens and he calls his action homœopathic. Both were homœopaths and both were allopaths when they made the prescription, if viewed in a narrow sense.

How much simpler the conception of the action of drugs becomes when we take the so-called law of cure, *similia*, as a method of selecting drugs, and say nothing about how the cure is wrought, for none of us know, or can know that. Many of our local applications are employed on the principle of *similia* as a selecting formula. The action of heat is primarily to dilate the tissues, and subsequently to contract, and cold to primarily contract, and secondarily to dilate, and we utilize both these phases of water temperature, and we are following the *similia* method of selection when we do it. Taking all the possibilities of drug-action into consideration, we can play along any part of the plane (or circle, if you like that idea better), and, understanding what we want to do with our drug, what particular part of cell modification, and how much of it we want, modifying the dosage of the drug, secure an action. Do not let us be drugs for failure, but our lack of knowledge to know how to select them, and what dose to use, when to repeat, when to stop, when by the addition of another drug which shall partially maintain one action while we are working on another function with another drug (possible), all of which are factors that come in for blame, rather than the drug itself.

I could, I think, infinitely multiply examples illustrating the fact that the underlying principle of drug selection is the so-called law of similia. You can yourselves, however, by taking up the materia medica of any school and noting the similitude to either the symptomatology or known pathology of disease, see that the drugs employed have the power to produce somewhat similar phenomena to the maladies for which they are prescribed.

My principal contention is, that drugs have a two-fold, *aye*, more than a two-fold, action; that they, or the reaction of the system against them, produce precisely opposite states and conditions of the body cells, and that *any phase of this action* may be made the basis of a drug prescription, on the principle, not of like cures like, but *that a similitude of symptoms or states forms the basis for the selection of the curative drug.*

A drug selected according to its similitude to a case may act by inducing equilibrium in function, and equilibrium of function, the happy medium between exaltation and depression of activities, ought to approximate normality. A drug, properly given, establishes this equilibrium, no matter whether we hit at it in what is called the homœopathic or the allopathic method. A failure to appreciate the fact that a drug has a variety of actions from the moment of its entrance into the system, and that regulated dosage or individual idiosyncrasy determines the effect along the plane of its action, and that whatever its starting point, it has the power of ultimately reaching the opposite state of action, has robbed the homœopath of far more than half his ability to successfully prescribe, and has also deprived the so-called regular from the magnificent drug effects secured by his homœopathic brother.

Drugs affect certain cells or groups of cells in a particular manner; that is to say, their function is obviously altered, and this phase can be utilized in prescribing, as well as its opposite, or even middle effect.

I think, therefore, that most of the effective prescriptions of drugs, by either isopaths, homœopaths, allopaths or selection, show that there is a similitude between the disease picture, or rather some phase of the disease picture, and the administered medicine alters cell action in such a manner that a return toward health is promoted. True, cells may have to be altered in many ways before, in acute disease, complete health is restored in curable cases; but, nevertheless, there is in every intelligent prescription a similitude between the phase of the disease successfully prescribed for and the resultant move toward a restoration of cell equilibrium. Even in nature's attempt to cure, in the so-called self-limited diseases, whether she do so by the development of a phagocytosis or an antitoxin, she endeavours to produce the very opposite of the diseased picture, and, while neither she nor the drug always succeed in producing the very opposite picture, the whole tendency of nature, and of drugs, is to go toward the opposite side of the prevailing condition; and mostly equilibrium, and not the opposite condition, is produced, and equilibrium is relative health.

Drugs prescribed at either end of a disease picture produce the best results, not when the opposite condition is induced, but when they tend toward the opposite and induce equilibrium.

To my mind the interpretation of the so-called law of cure as a principle of drug selection, of almost universal applicability, and the recognition by the homœopath that his purely symptomatic prescriptions only embrace half the truth at the foundation of the possible cure, and the recognition by all schools of the fact of the relationship of drug prescribing to a similitude in the symptoms and states produced by drugs, will lead to the development of a materia medica that will ultimately, with the hearty co-operation of all schools, to incalculably important results in the systematizing of our present vague and uncertain observations of drug-

action, and will tend to make a rational posology. If similia be accepted as a basis upon which a remedy may be selected, because provings have shown a power of the drug to act upon the tissue-cells that have produced the symptoms, we will be at the beginning of a new and glorious era in the progress of medicine. Come, "let us reason together."—*Hahnemannian Monthly*, December, 1903.

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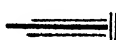
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ERRATA.

In the February number of the Journal

Page 64, line 15, for "will not succeed" Read "will succeed."

Page 65, line 32, for "Bertins's" Read "Bertin's."

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MEETING OF THE CALCUTTA HAHNEMANN SOCIETY
ON THE DEATH OF DR. MAHENDRA LAL
SIRCAR, THE FOUNDER PRESIDENT.

Pursuant to the notice issued by Dr. Akshya Kumar Datta, Secretary to the Calcutta Hahnemann Society, a special general meeting of the society was held in the hall of the Indian Association for the Cultivation of Science, on the 6th of March 1904, in memory of Dr. Mahendra Lal Sircar, the late Founder-President of the society. There was a large and influential gathering, the friends and admirers of the late doctor and almost all the homœopathic practitioners of the town and its suburbs being present.

Raja Peary Mohun Mukherjee, being unanimously voted to the chair, made a brief remark on the late Dr. Sircar, and then asked Dr. Akshya Kumar Datta to read his address.

Dr. Datta then addressed the meeting thus :—

DEAR BRETHREN, COLLEAGUES, AND FRIENDS,

I deem it hardly necessary to make any apology for having invited you to-day to this meeting. For, I fully believe, that

the sentiments expressed in the formal notice issued for convening this meeting will find an echo in the heart of every person present here. Hence, I look upon this gathering as the result of a spontaneous outburst of feelings, well suited to solemnize this mournful occasion. But as a brother's tears claim a brother's presence, it is natural that you would kindly respond to my feeble cry. I thank you, brethren, most heartily for this response of yours. Then, again, the sentiment that four pleasures become greater when there are two to enjoy, and burdens lighter when there are two to bear, is almost instinctive in man, and finds expression even among the lower animals. I doubt not that some such sentiment has moved every one of us to come here. In expressing our mental agony to one another, we mean only to lighten our hearts, to a certain extent, of the heavy calamity that has overwhelmed us all by the sudden death of our revered chief.

Born amidst scenes of simple country life, an orphan from childhood, innocent, mild, and always methodical in his habits, he grew up, through infinite vicissitudes of fortune, into an intelligent and educated youth, fired with the ambition,—indeed, the most ‘laudable ambition,—“of acquiring *wisdom*, which, according to Carlyle, is “sound appreciation and just decision as to all the objects “that come round you, and the habit of behaving with justice, “candour, clear insight, and loyal adherence to fact. Great “is wisdom. Infinite is the value of wisdom. It cannot be “exaggerated; it is the highest achievement of man: blessed “is he that getteth understanding,* * * If that is a “failure, all is failure.”

This longing after wisdom led him to the inevitable habit of study and observation of Nature. His mental culture and discipline were precise, methodical, and scientific. He became an ardent and inveterate seeker after truth, the natural sequences of a logically formed mind. In seeking truth at the bottom of all natural phenomena, he adopted the existing means of experiment and observation, whence he imbibed his deep love of Science. Educated as a man of medicine,

his habits of study and his inherent love of truth, led him to examine and review the then-existing condition of his professional knowledge. As the inevitable result of such examination and study, he grew dissatisfied and disgusted with the modes and methods of the dominant school of medicine. The first note of dissent and distrust, which he sounded to the ear of the profession, was embodied in his celebrated pamphlet entitled *On the supposed uncertainty in Medical Science*. He saw with the clear eye of wisdom that the whole fabric of the old system of medicine was simply based upon hypotheses, assumptions, and dogmas, which could not bear the light of logic and truth. The growing distrust in his profession began to prey upon his mind. He became impatient for truth. He found it at last. The dawn of a glorious career appeared in his mental vision. Homœopathy opened out to him a new vista of truth. It was providential. Time alone disclosed that his conversion to the new system of medicine was an epoch in the history of the medical profession in this country under British rule. I need hardly dwell upon the enormous self-sacrifice he had to make, and the persecution and privations he had to undergo, in consequence of his sudden change of faith. Months and years rolled by till his cry in the wilderness was feebly heard by a few intelligent men of his country, chiefly among the laity. But the sincerity of his conviction alone bore him through all his miseries till, like a faithful knight of truth, armed with the sword of courage and the shield of prudence, he silenced all his adversaries and established the reign of law in the domain of medicine. Friends and foes alike admired his glorious triumph over time-honoured ignorance and deep-rooted prejudice. It is nearly half a century ago that the light of truth illuminated his mind,—truth which is the “golden chain that knits the terrestrial with the celestial, that sets the seal of heaven on the things of this earth and stamps them to immortality.” He could then foresee, like a seer, the coming system of medicine and the true system for

the coming races of the civilized world. Acting up to his conviction it was he who raised Homœopathy to its present dignified position. It was he who opened out a new field, created a new market, as it were, for the honest, unostentatious work to be undertaken by a new generation of faithful adherents to the tenets of Hahnemann. As a great physician of his time, his humanity, charity, and kindness for the sick and the distressed of every nationality, creed, and colour, will ever be remembered and cherished by a grateful people. The benefits of his sound medical advice and his gratuitous distribution of medicines to the sick, were freely availed of by those for whom they were intended, continuously for about forty years. He successfully edited a medical journal in a liberal spirit, for more than forty years, and his contributions to the literature of medicine were both varied and original. His own love of Science animated him with the laudable desire of disseminating a knowledge of Science, by cheap and popular means, amongst his countrymen who then badly stood in need of it. "The Indian Association for the Cultivation of Science" is the fruit of that love. His life was consecrated to the cause of his country, and he always identified himself with every public movement undertaken in the interests of his countrymen. His sincerity and candour, his love of truth and knowledge, his patriotism and large-heartedness, and, above all, his courage and capacity for work, mark him out as one who must be placed in the very forefront of his generation. How greatly do we miss to-day in this hall his venerable figure, his cheerful countenance always animated by zeal and energy, his bright penetrating eyes beaming with intelligence, his broad forehead, the favourite seat of philosophic calm! All these combined to impart a classic aspect to that noble figure. His eloquent voice, though silent to-day, has left behind it an undying echo within the walls of this sacred building. His useful career is now at an end here. It has pleased heaven to call him away to higher and sublimer spheres of activity.

While bitterly bemoaning his loss, we could not, till now, realize our peculiarly painful situation. We are yet a small body of Homœopathic practitioners, with inequality of culture and capabilities, scattered all over the country, isolated from one another, eking out a precarious livelihood against immense odds and difficulties and prejudices very hard to die, in the midst of the contempt and ridicule of the members of the dominant school of medicine, without the sympathy and support of the public at large and of the Government as well. It is only to-day that we painfully realize the gap that has been made in our midst. The central wedge and the key-stone of the arch that held the whole fabric intact is lost. Without a central governing body or an authoritative society, without a college or hospital worth-naming, a journal faithfully representing the cause of Homœopathy in this country, what is our position to-day, and what would betide us at no distant future, if we fail to act more vigorously than ever in the absence of our great leader?

In him we have lost a faithful guide, a true representative, a wise instructor, a kind friend and well-wisher. He was, in fact, the all-important link of unity amongst ourselves, the arbiter of all our little disputes, and the final court of appeal for settling our differences and doubts. In short, he was the one soul we could look up to for help and wise counsel in times of danger and difficulty. Such was the man that has just passed away, and such being our deplorable condition, we have met to-day to lament our loss. We record here our sense of the great loss which the country has sustained in general, and our profession in particular, by this melancholy event. Let our heart-felt sympathy, and sincere condolence, go out to the sorrowing widow in the depth of her solitary misery, and console to some extent his only son, our worthy colleague, Doctor Amrita Lal Sircar, and cheer up a little bevy of grand-children and other worthy relatives immediately connected with his household.

It behoves us now to devise how best to cherish and

perpetuate his sacred memory amongst ourselves. Poor as our number is, poorer still is the length of our purse. Even if we venture upon any material embodiment of our grief at this moment of impulse, I am afraid, it will greatly fall short of the measure which can satisfy our hearts. Nevertheless, we may hope to derive some consolation from the great prospect that, sooner or later, larger associations and meetings of our countrymen will take up the cause and devise means for preserving the grateful memory of the illustrious individual who has passed away, in far more suitable forms. For ourselves, the best way to show our deep regard and esteem for him, is to adopt, in life and practice, some of the high traits of his character and the noble example he has left to us.

Now, brethren, as his faithful followers, it is our duty to maintain the continuity of his life's great work. It is high time that we should unite in a body. To use an anatomical phrase, let us first unite and then ossify. However small our number, unity will give us strength. As physicians, we should cultivate that broad-hearted sympathy and love of humanity which distinguished the character of our great leader. If we are to be animated by a zeal for truth, and energy for noble work, we must educate ourselves properly for following in his steps. It is only capable men that always walk in broader paths of duty and self-sacrifice. Let us sink all petty jealousies and selfish motives, all love of lucre and desire for false fame, in one supreme consideration, *viz.*, that of maintaining the dignity of the Homœopathic profession before the eyes of the public. For unless we can command the respect and confidence of the public, all individual efforts will go for nothing. If we join together in a closely united body, with capacity for good and noble work, we shall surely command the respect and confidence of the public and ultimately win the sympathy and support of our liberal Government. To achieve this end, we must be animated by a spirit of sincerity and of confidence in one another, for in that case, we shall know one another better and understand one another's wants

and abilities, short-comings and weaknesses. Then with an open heart we shall be able to help one another and try to rectify and remedy one another's defects with every means at our disposal. It will then alone be possible for us to work with light and friendly hearts conjointly for the good of the profession and of the public at large. It is high time, brethren, that we should proclaim from house-tops, with the forcefulness at our command, the reign of law and truth in the domain of medicine.

The following resolutions were then proposed and carried unanimously :—

First.—That this meeting desire to record their deep sense of the profound loss the country has sustained in general, and the medical profession in particular, by the lamented death of Doctor Mahendra Lal Sircar, late President of the Hahnemann Society of Calcutta.

Second.—That this meeting tender their heartfelt sympathy and sincere condolence to his family in their sad bereavement.

Third.—That this meeting propose to form a small committee, with power to add to their number, for the purpose of collecting funds, with a view to perpetuate the memory of Doctor Sircar in some suitable form.

When the first resolution was put to the meeting the whole assembly stood up and expressed their unanimity by observing a solemn silence.

COMMON DISEASES AND THEIR TREATMENT.

I. ABSCESS COMPREHENDING INFLAMMATION,
SUPPURATION AND ULCERATION.

Abscess is generally the middle link in the connective chain of occurrences known as Inflammation, Suppuration, and Ulceration. The three stages are so intimately connected with each other that their separate consideration does not actually convey the importance of the whole process. The value of the therapeutic administration of the new school is that if medicines are used in proper time beginning with the early stage of inflammation, most of the cases do not undergo the suppurative process, but absorption of inflammatory exudation takes place. The old school try to hasten suppuration, protracting the disease to an indefinite length of time.

The lancet is almost their only method of cure. There are a class of medical practitioners who largely resort to indigenous drugs to reduce inflammation. The want of methodical knowledge does not contribute to their desirable success for which they earnestly strive. Mostly Homœopathy and a little of Kaviraji and Yunani, have given them the impetus of making improvement in their healing art. The tension of suppuration being relieved, either of itself or by knife, is necessarily followed by ulceration.

The dreadful iodoform, iodol, or some other preparation of like nature, is used with a fashionable vanity which puts Sancho Panza into the shade. The modern evolution of orthodox allopathy is mostly an undigested heteropathy.

Cases are not rare where the external application of iodoform has produced gangrene. The danger of amputation was averted by the use of Homœopathic medicines. It is a curious fact that no allowance is made for the respective spheres of Iodoform, Carbolic acid or Boracic acid. These three are taken to be easily convertible into one another. Any one of them may be used according to the easy choice of the

practitioner. A worse distressing instance of misapplication is rarely observed.

A few homœopathic practitioners unreasonably follow this bad practice quite against the principle they have adopted. It is not my purpose to show their innumerable mistakes. I would rather be content to describe the therapeutic uses which tend to a successful result

Inflammation is derived from *Lat. Inflammo*, to set on fire. It is "a morbid state of the whole or any part of the system, characterized by heat, redness, and pain, owing to the stoppage of function in the microscopic elements of the involved tissue or to changes in the blood vessels and blood, resulting in the exudation of *liquor sanguinis*, with permeation of white blood corpuscles, without rupture of the vessels, into the contiguous parts, or to altered condition of the tissue, so that inflammation is an extremely complex process with excessive exudation, terminating favourably in resolution, when the abnormal process ceases and recovery ensues, or going to various degrees of ulceration and suppuration, induration, and mortification."

It is an established fact that inflammation may be produced by a wound without breaking the continuity of the affected tissue. In this case the tissue containing the blood-vessels and nerves suffer an internal injury without any external manifestation of a like nature. The outward symptoms are heat, swelling, redness and pain. In other cases there is a slight injury in the epidermis, or it may have extended inside the dermal layer. The external manifestation is so trivial that the importance of the little separation of the tissues is entirely overlooked. Through this abrasion or wound, infinitely small particles of irritating substances, with or without micro-organisms enter to produce the complicated phenomenon of inflammation and which may subsequently lead to suppuration. A distant absorption of microbes or other irritating substances may lead to deep seated inflammations of bones, glands or other internal organs, etc. A regular

systematic survey is not possible in the absence of critical research on the various kinds of inflammations affecting the different kinds of tissues. After all, it may be said that the therapeutic administration of medicines depends on many doubtful assumptions.

Inflammation concerning a small space and without deep seated extension may be taken to be of a very ordinary type, in case the injury to the skin be absent. Resolution may take place without any external application or internal administration of medicine. For all purposes, it is considered safe to resort to therapeutic use, which may favour resolution even in bad cases. Chronic inflammation may either lead to abscess or resolve itself.

TREATMENT OF INFLAMMATION.

Acon. Nap. is a medicine for congestion and inflammation when it results in fever. Tension alone does not convey the proper idea in describing the action of Aconite. The inflammation of internal organs requires Aconite for preliminary administration, if it is unattended with any injury. Cold alone may be the cause, without the interference of any morbid material. Even irritation of foreign substances may be checked by the timely administration of this medicine. Septic absorption should be treated at the beginning by Aco. In the *Materia Medica* and *Therapeutics* by Hempel and Arndt, the following observation occurs :

"In all acute diseases which are ushered in by a true inflammatory stage, aconite is generally the first remedy indicated. It makes no difference in what part this inflammatory process is going on, whether in the meningeal membranes, the organs of special sense, the muscles, serous or mucous tissues, the glandular system or any of the internal viscera. Whenever the local disturbance is accompanied by a full, hard and bounding pulse, dry and hot skin, coated and dry tongue, restlessness, thirst, and if the patient had experienced a more or less marked chill previous to the

supervention of the febrile reaction, aconite is to be carefully studied as a possible curative agent."

It cannot be doubted that the above observation is very valuable. But I venture to say that the absence of full, hard, bounding pulse, dry and hot skin, coated and dry tongue, restlessness and thirst is not a contra-indication of *Aconite*. In fact, several cases have been cured in the beginning of any kind of inflammation without the accompanying symptoms.

Guernsey says:—

"We think of *Acon.* in sudden inflammation, especially if caused by cold, *dry air*, suppressing exhalations of the body."

Then, there is the pain of *Acon.* Clarke writes:—

"*Acon.* is one of the great pain remedies, vying with *cham.* and *coffea* in the intensity of the pain it causes. Pains are intolerable, driving to desperation. The pains of *Acon.* are tearing, cutting; are attended with restlessness; accompanied by numbness, tingling, or formication. *Acon.* cannot bear the pain, cannot bear to be touched, cannot bear to be covered."

Another pertinent remark occurs in Hempel and Arndt with regard to sprain. They say: "In sprains, homœopathic physicians generally use *arnica*, although *aconite* is most frequently required in order to scatter the sanguineous congestion consequent upon a sprain. For this purpose, *aconite* may be used both internally and externally; internally in the attenuated form, and externally from twenty-five to thirty drops of the strong tincture in eight table-spoonfuls of water."

My experience is in accordance with the above remarks, which clearly define the use of *arnica* and *aconite* in sprains and contused wounds. The external application is possible where the skin remains uninjured; otherwise it causes pain. The administration of *acon.* is aided by the following symptoms: swelling and burning heat of wounded parts; red,

hot, swollen and shining skin with violent pain; pain and swelling of internal organs.

It cannot be doubted that the extended and judicious use of Acon. will help us in increasing our sphere of usefulness in either localised or diffused inflammation of traumatic or non-traumatic origin.

Acon. Ferox.—The difference between the Napellus and Ferox not only lies in their habitation but also to their peculiarity of structure and action. The Napellus is largely used in European systems of practice. The Ferox holds that place with Kavirajes and Yunani practitioners. It is a curious fact that in India both of them are largely available. Western Himalaya produces the Napellus. The Eastern portion of the same mountain is the home of the Ferox. In Calcutta, the Napellus is supplied from Simla and the neighbouring mountains. The Ferox mostly comes from Eastern Nepal, where a regular trade exists. In the Simla bazar, the Napellus is known as Mitha Zahar (মিঠা জহর), Katbish কাটবিষ and Ban-balnag (বন বাল নাগ). From that place I procured a good supply of the root, which has given me a strong tincture as useful as that procured from Europe. The Ferox can amply be found in the Indian bazars. It is known as Mitha Zahar (মিঠা জহর). But the specific name is bachnag or vatsyanag (বছনাগ, বৎস্যানাগ). The term nag or serpent is used to convey the idea of poison. Aconitum Lycocotnum is sold at Lahore, where it comes from Kashmir and known as Lahori bachnab.

The difference of action between the Ferox and Napellus is marked.

Charke says :—

"The *Ferox* developed burning pains in greater intensity than the alkaloid (aconitine); more intense mental activity followed by greater depression. The *Aconite* note of unendurability of suffering was marked. Anxiety and fear of suffocation from paralysis of respiratory muscles; obliged to breathe half-sitting up with head resting on palms of hands."

Tingling and burning of the tongue on the application of the mother tincture are mostly significant. They are worse in the *Ferox* than in the *Napellus*. In fact, those symptoms generally help to distinguish the *Ferox* from the *Napellus*. There is a marked distinction in the pathogenesis of both.

I take the following from Clarke with regard to the *Ferox* :

"Formication spread over whole body, least noticeable on parts that had been cold; worse or excited by change of temperature or motion..... It caused a painful unrest so that he could not possibly lie quietly more than a few minutes..... Benumbed sensation, as if he had on gloves; on pinching cheeks no pain felt; seemed to walk on woollen carpets."

The affection of the nerves making them rather insensible to pain is a marked feature. The application of the *Ferox* in contused wound or other inflammations of nerves is valuable where there are no great heat, redness and acuteness of pain. In chronic or cold inflammations with or without threatening suppuration, is its proper sphere of activity. It can also have a place where the deadening sensation of a part of the body has not disappeared long after a wound or a sprain having undergone many treatments. I have used the *Ferox* as an internal and external remedy in several kinds of inflammations, including those affecting glands and other organs. The parallel lines of usefulness of the *Ferox* and *Napellus* will be better comprehended than at present, by a systematic proving of the *Ferox*, and the administration of both in wounds and other inflammations. In many instances they are serviceable on the failure of *Arnica*, *Hypericum* or *Ledum*. It has become almost a pernicious habit to increase the number of medicines in our *Materia Medica*, and not to define the proper sphere of the old and tried remedies which remains unsettled. We are unconsciously following the footsteps of the orthodox system and like them creating a blunderbuss.

Actea racemosa—has useful action on injuries of the spine. The following case is from Hoyne:—" (Spinal Con-

gestion from a Railroad Injury.)" H. V., aged twenty, single, was admitted to the hospital December 7, 1876. One year ago, was crushed between two cars, the bumpers catching him in the left hypochondriac and inferior mammary regions. He did not think the injury would end seriously, and allowed it to go without treatment. He now complains of very severe pain and hyperaesthesia of the whole left side aggravated by lifting, but relieved by walking about. A slight slap on the leg induces severe cramps, and simply touching him on the breast over the cardiac region, will almost immediately bring on a fit of crying; has pain commencing on the cardiac region and extending downward, sometimes sharp, twitching pains in the lower extremities, which extend upward. On passing the finger along the spinous processes of the vertebrae, we find extensive sensitiveness from the fourth dorsal vertebra to the sacrum. Has some headache; bowels regular; but the stool causes some pain. Sleeps only two or three hours each night, and the little rest he does get is taken in a chair. Has not been in bed for nine or ten months. As soon as he attempts to lie down he is taken with severe cramps, which are unrelieved until he rises and moves about. Pulse 76; temperature $98\frac{1}{2}$; Arn 30. December 8. No better; changed prescription to Cimicif. rac. 200. 10th Improving. 13th. Is gaining rapidly. 15th. Went to bed last night after considerable urging and slept soundly for twelve hours, which was the first sleep he enjoyed in bed for over ten months. January 18. Continued going under Cimicif. rac. 200, alone and was this day discharged cured. Dr. B. G. Carleton."

Aethusa Cynap. has a significant feature in producing chronic inflammation of the eyes with swelling of the meibomian glands.

Agaricus Musc. produces various kinds of pains due to localised congestion and inflammation. Of it I find in Hempel and Arndt the following:

"The pains which the fungus has developed in our

process are very peculiar. Beside the pains of a rheumatic character, such as tearing, or drawing-tearing pains, we note stinging or sticking pains, as if splinters were sticking under the skin or in the part; the record reads that these pains sometimes seem to proceed from thousands of such sharp points; they seem to have been more particularly felt in the deltoid muscles and in the cheeks.

Another set of pains are *tensive pains* with a feeling as if the muscles had been strained; this pain, when affecting the scalp, causes a sensation as if this organ were adhering more lightly to the scalp. *Dislocation pains* are felt in the deltoid muscles in the hip joint, etc. Burning pains are likewise caused by this agent, more particularly in the region of the spinal cord, in the hypogastrium, in the fauces."

Prickings in the liver and spleen have led to its use in hepatitis and splenitis giving rise to sharp needle like pains. In spleen the sharp shootings occur during and after inspiration. Clarke writes:

"*Agar.* is a spleen medicine, causing stitch in the sides, and it has cured stitch in runners, enabling them to run further."

Agaricus has another characteristic of producing pain as if pierced by ice-cold needles. It is the opposite of *Ars.* whose prickings come as if from hot needles.

"At the same time many symptoms of intense coldness are produced: cold and blue; sensations as if touched with ice, or ice-cold needles. All the symptoms of frostbite or chilblains (itching, redness, and burning). Somewhat allied to chilblains is bunion, for which *Agar.* has been found specific by many practitioners."

The pains in the body and joints, like bruised sensation render a similarity with *Aco.*, *Arnica*, *Eupatorium perf.*, etc.

Agnus has bruised sensation all over, and sprains due to lifting heavy weights. It has cured sprains with the mental condition of great melancholy and despairing sadness:

Allium cepa produces a peculiar kind of pain in nerves

as the result of amputation or injuries. Allen writes of it thus :

"This drug has been used for neuralgias following amputations or injuries of nerves, characterised by fine, thread-like pains, shooting, but not burning like those of arsenic."

In Hempel and Arndt, I find the following :

"Dr. Helmuth recommends its use in Neuralgia of the Stump, and relates the case of a man who suffered intensely from this difficulty. After taking various remedies with great perseverance his attention was accidentally caused to a similar case cured by eating onions. He immediately procured three large ones and ate them. He continued this treatment for several days, and was able to sleep every night. Then his physician thought of trying *allium cepa*, and prescribed the tincture with almost the same effect, which was continued until the cure was completed. (*Am. Homœopathist*, April, 1878)."

A case from Hoyne :—" (Traumatic Sciatica after Amputation.) Amputation of lower third of thigh, made necessary by the results of an abscess in the popliteal space. Union by first intention followed and everything proceeded most favourably up to the point of complete restoration of health, except a neuralgic condition of the sciatic nerve, which has been involved in the abscess. A burning, stinging pain began to be felt running up the thigh and down to the sole of the foot as soon as the abscess began to form ; it increased in severity, and was not relieved by amputation. There was no sleep or rest. The patient became desperate, and no proper relief was given by any of the remedies administered, except from half-drachm doses of *Amm. muriat.* Nearly three months after the operation, the patient picked up a scrap of printed paper, and his eye met a little paragraph, on raw onion in neuralgia. He resolved to try it, and ate a whole one at the bed time. All pain immediately ceased, and he slept quietly that night. *Allium* 200 was given without effect, but ten drops of the tincture were taken for two days, since which there has been no pain. Dr. C. S. Shelton."

The common red onion has cured whitlow of fingers. Painful affections of the fingers about the nails, and red streaks running up the arm are the principal indications. In India, the painful finger is sometimes covered with bruised onions to relieve the suffering. The medicine is specially applicable in panaritria of lying-in females having the same symptom of red streaks running up the arm which are very painful.

(To be continued)

EDITOR'S NOTES.

The Late Major A. E. Grant, I.M.S.

A medical man of great promise who had chosen India for his career, and who intended during the remainder of his life to work mainly at prevention of disease as better than cure, has suddenly passed away from our midst. We give below a short account of his life's history for the example it teaches.

Major Grant was born in India on the 17th of August 1862. His early associations were with the Indian Army of the Madras Presidency to which his father was attached. He received his final education in the University of Edinburgh where he took his degree in 1886. After receiving his training in hygiene and pathology in the Army Medical School at Netley, he entered the Indian Medical Service in 1888. For the first two years he was employed on military duty. He was then appointed to act as second Physician at the Madras General Hospital and Professor of Hygiene at the Medical College. This post he held for ten years, and it was there that he distinguished himself as a learned and accomplished physician and a scientific and active hygienist. "To his lectures at the College he devoted the greatest care and his clinical teaching in the wards was most systematic." He was essentially a gentleman in the best sense of the term and he retained throughout his life the independence of character he displayed in his student days. With his students he was very popular and had gained both their trust and respect. He had also the confidence of his native patients, to whom he always showed his kindness and sympathy. "It was whilst lecturing on hygiene that he set himself to revise Kings' *Madras Manual of Hygiene*, the first volume of which he published in his own name as the *Indian Manual of Hygiene*; the second volume, a large part of which exists in manuscript, he unfortunately did not live to complete. He was an ardent advocate of original research, and was watching with the deepest interest the development of the Tata scheme in India." The last appointment he held was that of Sanitary Commissioner with the Government of Madras. His tastes were strongly in the direction of hygiene and he had a great mind to devote his whole time and thoughts to that subject. His health began to fail when on duty with the Malaria Conference of Nagpore two years ago. He died in England of Glycosuria on the 13th December last at the early age of forty-one.

We join with the *British Medical Journal*, from which the above information has been mainly extracted, in deploring the great loss which India has sustained at the premature death of such a man. Dr. Grant had almost all the elements required in a scientific hygienist. He had received a good general and medical education in Scotland, had independence of character from his school boy days, was popular with his students and patients, whether European or Native, was a successful physician very strict in matters of diet and the various other resources of therapeutics, had a strong predilection for hygiene, was possessed of

a versatile mind and took the deepest interest in original researches and in the cultivation of the physical sciences in general. He was thoroughly acquainted with sanitary science, and "with the mode of its application to the preservation of health under every possible variety of circumstances and character." Dr. Grant's death at the early age of 41, has deprived India and the scientific medical world in general, of a valuable worker almost at the very threshold of his career.

Dr. Sircar's Seventieth Anniversary.

We thank the editor of the Homeopathic World for the kind notice taken by him of the seventieth anniversary of Dr Sircar. It was never dreamt that this happy celebration will so soon be followed by his death. We are thankful to God that we could celebrate that anniversary.

Treatment of Burns.

"Ten grains of menthol in one ounce of distillate of witch-hazel" according to the *Hanemanian Monthly* of February, "relieves the pain of a burn in one minute. It may be applied upon guaze dressing."

Instead of mixing menthol with witch-hazel a separate trial of menthol in water or rectified spirits may be made to give us an exact idea of the action of menthol. The covering of the burnt part with boracic acid ointment gives the patient better relief than many other kinds of treatment. The preference of the future medicine will lie in the immediate lessening of the suffering.

Pathology versus Symptomatology.

Dr. Turner gives an interesting case in the *New England Medical Gazette* of January, showing the priority of position of pathology as distinguished from symptomatology.

"Early in August 1901, I was consulted by Mr.———. He was then fifty-nine years old, of medium height, weight usually one hundred ninety-five pounds, complexion dark, but skin and sclerae of good color.

In the army (Civil War) he had malaria with quinine *ad infinitum*, but has since been well, until five or six years ago, when he began to have some gastric irritability, at irregular times, with attacks of gradually increasing distress, the sensation of a ball in the stomach, and, finally, after four or five days vomiting of much partly digested food gave him relief. No history of blood in the vomitus was obtained. During these attacks some vertigo (*Sic*). With some of the early ones he was jaundiced.

* * * * *

Such remedies as *sepiâ*, *nux vomica*, *colocynthis*, *lycopodium*, *rhus*

toxicodendron, dioscorea and cuprum metallicum, seemed indicated at various times, but all failed to give more than temporary respite."

There were temporary reliefs from some of these medicines, but they could not give him a permanent cure. Dr. Turner at last thought, that it was a case of lead poisoning, and the gums showed the blue line. He gave plumbum metallicum 3x which alleviated the pain gradually never to return.

Limit of Medical Treatment.

In the *Hahnemannian Monthly* for February, Dr. Higgins cites the following case, to show the province of medicine as opposed to that of surgery.

"We once saw a case of pleural effusion treated for weeks with bry. and apis. high. Finally, after the case was hopeless, thoracentesis was resorted to and a quart of pus removed. We are willing to admit that a pleural effusion will disappear sometimes under homœopathic treatment. It will do so under old school treatment also, but if it doesn't show evidence of subsiding in two or three weeks it is fool-hardy to persist in such treatment longer. We firmly believe had the above case been operated after two or three weeks of unsuccessful treatment, the patient's life would have been saved. The doctor's enthusiasm for homœopathy and high potencies robbed him of his 'horse sense.' If he had an abscess of the thigh he would have advised incision and drainage. As far as treatment is concerned, what difference is there between an abscess of the thigh and one of the pleural cavity? Common sense tells us they demand the same treatment."

Some of the homœopathic practitioners forget pathological indications so much that they think it possible to do everything by medicine. We were once informed of a case of inordinate irritation of the stomach due to accidental swallowing of a few artificial teeth which were attached together. Some enthusiastic homœopaths tried many medicines, but in vain. The man, an earnest believer of homœopathy, at last died. Our informant, a medical man, was horrified at this treatment. A surgical operation, perhaps, could have saved him. The truth of the proverb, save me from my friends, was painfully verified in this case.

Microbe of Delhi Boil.

Major C. Donovan, I.M.S., writes in the *Indian Medical Gazette* for March thus:

"I have received a letter from Mons. Mesnil of the Institute Pasteur, Paris, to the effect that a protozoan very like *Piroplasma* Donovan, Laveran and Mesnil, has been found in tropical ulcer.

I give Mons. Mesnil's words in original: 'Un Américain J. H. Wright, vient de decouvrir. (*The Journal of Medical research*, November, 1903, *Journal of Cutaneous Diseases*, January 1904.) dans les frottes des coupes du bouton d'Alps (tropical ulcer—

Aleppo boil) un protozoaire ressemblant extremement au *Piroplasma* Donovanî. Ce Protozoaire est tres abondant dans les cellules qui constituent l'infiltration du Bouton."

This letter bears the date, February 2nd. On the 15th February he again writes :

"Since sending in my letter to you anent 'Delhi Boil', I have found *Piroplasma* Donovanî, in scrapings from small ulcers on the knee of a case suffering from Piroplasmosis. The ulcers were caused most probably by the itch acarus (*Sarcoptes Scabiei*), any way the patient was covered with itch. This skin affection with small ulcers I have noticed on several of my cases infected with *Piroplasma*. Is the *sarcoptes* an intermediary host? Dr. J. H. Wright, Boston, has very kindly sent me a reprint of his article 'Protozoa in case of Tropical Ulcer (Delhi Boil), in the Journal of Medical Research for December 1903, and the plates therein depict organisms identical with mine."

Major Donovan raises an important question, what relation does *Sarcoptes* bear to *Piroplasma*? The identity of *Piroplasma* has been established. But that does not elucidate the connection of *Sarcoptes* with *Piroplasma*. Whether they are the same, identical or different protozoa has yet to be discovered.

Horrible Polypharmacy.

The *Indian Medical Gazette* of March, supplies us with the following fashionable prescription for plague, of the orthodox school. The multiplicity of medicines in one mixture with its several addendas and corrigendas is the rage of the day. Not plague alone but all other diseases are liable to be treated in this wonderful way.

"Prescription for Plague

R. Spt. Ether Nitrosi	...	...	...	3ii
Ammo. Chloride	...	...	...	3i
Tinct. Cincho. Com.	...	...	...	3ii
Mag. Sulph...	...	...	...	3vi
Pot. Nitras...	...	...	...	grs xii
Tinct. Digitalis	...	...	...	m'xii
Tinct. Nucis Vomica	...	...	...	3ss
Spt. Ammo. Aro.	...	...	...	3iii
Spt. Vini Gallici	...	...	...	3vi
Spt. Chloroform	...	...	...	3i
Aqua Anethi	...	...	...	3iii
Aqua Mentha Pip. ad	...	...	...	3vi

3i every half or one hour until fever is reduced, and four or five motions occur: this will cause profuse perspiration and redness of eyes diminish.

Put emplastrum hydrargyri over the bubo and after two hours, continuous hot applications of linseed poultices every half hour without break.

If the mixture on the first dose causes ringing in ears and profuse saliva and tears in eyes, and burning in the tongue the patient will surely recover.

If it occurs on second dose the patient will recover with difficulty. If three doses produce no effect, i. e., no abatement of fever, no purge, etc., the case will be fatal.

Buboes to be opened when ripe : raw should not be disturbed.

Tinct. Iodine in one or two minims doses recommended and may be added at the discretion of the Medical Officer when the plague is of a Pneumonic type."

Our contemporary remarks,

"An example of the way in which European Medical treatment gets discredited in the East, and the unreliability of the statistics on numerous vaunted modes of treatment. This blunderbuss prescription given *verbatim et literatim* was evolved by an Indian Practitioner, and was, or is still, much in vogue in the Central Provinces. It has been frequently prescribed for people suffering from ordinary 'fever,' and on their recovery they were cited as examples of recovery from plague under this particular treatment."

This kind of prescription for the treatment of plague is not confined to the Central Provinces alone, but we have also met with similar prescriptions even here in Calcutta.

In Calcutta, from April 1898 to March 1903, a period of five years, the official statistics have enumerated 38,921 attacks and 36,107 deaths. The difference between these two figures, 2,814 cases, includes unknown results and recoveries. The proportion of cures within these five years comes to about 7 per cent.

Over-Eating.

The *Homeopathic World* of January takes the following letter from the Daily Telegraph :

"Sir,—'A Man of Fifty' in your issue of to-day, says that he eats for breakfast a mutton chop, two poached eggs, two rolls, six slices of toast, butter, marmalade, three cups of coffee, and three bananas, and that he feels faint by eleven o'clock, and eats again heavily at one o'clock.

It was my good fortune, as a civil engineer in India, to see the coolies of the North of India, at work on irrigation and railway construction. They work hard and well ten hours a day in very cold and excessively hot weather, and are men of good physical development. It is not till their day's work is finished that they take their first and only heavy meal. During the day they will now and then eat a few parched peas, their one real meal in the evening consisting of wheaten chapatties, dal (a food like the lentil) condiments, butter, milk, and if available, a little vegetable or fruit. By the great majority no flesh food is eaten.

It would appear that their great strength is due to the fact

that they do not fritter it away in disposing of a lot of unnecessary food. They do not become faint at eleven o'clock.

I am, Sir, Yours faithfully,

Brighton, November 30,

AFLRED C. NEWCOME."

Another letter follows :

"Some three years ago like your 'Man of Fifty,' I was in the habit of eating a big breakfast meat, eggs, buttered rolls, etc., likewise a large lunch, afternoon tea, and a good dinner, and weighed over 12 st. I took plenty of exercise, too, but found I was getting very short-winded, and was not much good going uphill at any pace. Since then I have cut my breakfast down to an egg or two, a couple of pieces of dry toast, and a little marmalade, one large cup of tea, no butter or sugar, and only about a teaspoonful of milk. For lunch a piece of toast and a slice of lean meat, or small bit of cheese and a whisky and soda (weak), about five o'clock a couple of cups of tea and perhaps a piece of cake or a dry biscuit or two. Dinner, a little fish, and any meat, poultry or game; no soup, no sweets, no potatoes; claret or a whisky and soda to drink. I hunt two days a week, sometimes three, and ride about every other day on different horses, sometimes giving them a training gallop. I fill up odd time bicycling, but don't walk much if I can help it. Now I only weigh 10 st. 8 lbs, and am as fit as a fiddle; before I used to get heart burn and indigestion. I may say I eat plenty of green vegetables, tomatoes apples, etc., generally get up about 7 o'clock and go to bed about 11-30 or 12, and smoke in moderation."

The broad fact is, in Europe the people are mostly over-fed. In India the general pressure of poverty makes the inhabitants under-fed. The cases of coolies cited by Mr. Newcome are exceptions. There are cases of over-eating in India but they are rarely met with. One of our neighbours became bulky from over-eating. That state of his health prevented him from taking any active labour. He gradually reduced the quantity of his rice, dal and vegetables, and betook to *Murhi*, a kind of fried rice. Now he is sufficiently active and can easily take a walk of four miles or more. His former dyspeptic condition has vanished with his reduction of diet.

Our experience teaches also that above fifty a man must reduce the quantity of his diet and live more upon vegetables than meat. The evening meal ought to be as light as possible to help digestion during the night, the period of inactivity and rest.

Yoga and Hypnotism.

The practice of yoga, or mystical self-discipline, is common all over India and is undisguisedly advocated by American occultists, and, more mysteriously, by their English imitators. From the point of view of scientific psychology the practice is simply a quaint means of inducing the hypnotic state and as such deserves the study

of all those medical men who number among their patients hysterical believers in the doctrines of the late Madame Blavatsky. The effect of practising yoga must be at least bad for the nerves and injurious to the still unborn descendants of its practitioners. As described in the *Brahmavadin* it consists at present of four species—Mantra-Laya-, Raja-, and Hatha-yoga. A pious person, possibly an Eddyite, follows Mantra-yoga by repeatedly pronouncing some word and concentrating all his mind upon it. In Laya-yoga all the thoughts are concentrated on one thing or the idea of it, so that we become mystically one with it. Raja-yoga consists in holding the breath and consequently, as the Hindu yogis believe, in controlling the mind. Hatha-yoga is even more frankly hypnotic and its object—concentration—is obtained by sitting for hours in a cramped attitude or simply by squinting. The cramped attitudes of Indian yogis, which are maintained by some during a lifetime, have become proverbial. In a different spirit and in a more graceful manner artists' models may be described as unconscious followers of Hatha-yoga. Trilby was such, and her creator, Du Maurier, had much to say on the subject of mesmerism as induced by posing in one attitude in an artist's studio. Squinting with determination at the tip of the nose is a method much recommended by the yogis who doubtless see nothing comic in the act. But they practise other similar contrivances. The great aim is to hypnotise. Thus English followers of neo-buddhism have told us that they are in the habit of clearing the mind as far as possible of all ideas or thoughts. Among beginners this is attempted on a fasting stomach for about five minutes before breakfast. It must be an easier process for adepts than for the laity who at most, unlike the little girl in *Punch*, usually think not so much of "nothing" as of "things to think about."—*Lancet*, Feb. 20, 1904. *

Muscle and Nerve Rays.

THERE would appear to be no longer any doubt that rays are given off by active muscle and nerves, for the observations made by M. Charpentier have been completely confirmed by Dr. Hugh Walsham and Mr. Leslie Miller who have sent a communication upon the subject. These gentlemen point out that experiments are remarkably easy to perform and are absolutely convincing as to the actual existence of the rays. These emanations from the human body and their effect upon a fluorescent screen were first observed by M. Charpentier while studying Blondlot's rays (the so called "n" rays). When certain conditions are observed there is no difficulty in obtaining confirmation of M. Charpentier's observations and the most satisfactory procedure is as follows. The screens are prepared with hexagonal zinc blende which is placed in the form of a very thin film on thin paper, gold-beater's skin, or thin celluloid. The screen is excited by exposing it to the ultra-violet rays, sunlight, or, better still, magnesium light. The fluorescent light of the screen is then allowed to die away until it has reached the steady

stage. At this point if a muscle in a state of contraction, as, for example, the contracting abductor and adductor pollicis of the thumb, be placed underneath the fluorescent screen it will be seen to brighten perceptibly. We have inspected photographic plates which demonstrate this intensifying effect of muscle and nerve rays upon the fluorescence of the screen.—*Lancet*, Feb. 20, 1904.

The Relation of the "N" Rays to Vision.

A NEW department of physiology seems likely to be opened up through the discovery of Blondlot's "n" rays which appear to play an important role in regard to various manifestations of vital activity. Several scientific observers have been working at the relation of the "n" rays to vision and Blondlot has observed that the eye is itself a source of the rays and also that the sensitiveness of this organ to light is augmented under their influence. M. Augustin Charpentier has carried the investigation a step further and has tried the effect of directing the rays upon the brain through the skull. Stimulation in the way, especially of the region of the angular gyrus, produces a sensation of luminosity. Changes in the pupils can also be brought about by introducing the region of the corpora quadrigemina into the path of the rays or by acting upon the medulla through the agency of a source of the "n" rays placed over the cervical spine. It is probable, therefore, that the "n" rays which accompany ordinary light waves, are in part responsible for the phenomena of vision and in a recent communication to the Societe de Biologie M. Bohn has ingeniously applied this hypothesis to explain why fresh water and marine animals adhere to the irrelative habitats. In some experiments on *Nereis* he found that while the animal when kept in sea water swims about actively in the light, in darkness it falls to the bottom of the vessel and crawls there sluggishly. A similar change takes place when *Nereis* passes from salt water to fresh—e.g., as in entering the mouth of a stream—its activity ceases and it is then carried out to sea again. M. Bohn suggests that the relatively dormant condition has the same essential origin in the two cases and is to be attributed to the cutting off of the "n" rays, on the one hand by removal of the source of light and on the other through the inability of the rays to pass through fresh water.—*Lancet*, Feb. 27, 1904.

The Etiology of Leprosy.

We have now received a copy of a special report by Dr. George Turner, medical officer of health of the Transvaal, entitled "Fish and Leprosy" (Government Printing Works, Pretoria, 1903). Dr. Turner does not agree with Mr. Hutchinson that eating of decomposing or imperfectly cured fish is the chief cause of the prevalence of

leprosy. In support of his view he points out that leprosy is fairly common in Basutoland. He thinks that it is probable that the disease was introduced amongst the Basutos by the Hottentots but he argues that it does not follow that the source of infection was cured fish. He considers such an occurrence most improbable because the Basuto in his own land does not eat fish; he never fishes; and will not eat fish given to him by others. Dr. Turner gives a table showing the proportion of cases of leprosy amongst the different races reported at the census of 1901 in the Cape Colony. It is shown that excepting those of European race the Kaffir is the least affected, then in order comes the Malay, the most frequently attacked being the Hottentot. Yet the Malay is essentially a fish-eater in whose hands the catching and "washing" of fish chiefly rest. Dr. Turner argues that if the theory regarding the etiological influence of cured fish were true leprosy should be most prevalent amongst the Malays; but, as he has pointed out, such is not the case. Probably the white man eats fish more frequently than does any other class of the population, with the exception of the Malay, yet he suffers least of all. A table is given showing the number and percentage of the patients in the Pretoria Leper Asylum on July 31st 1902, and indicating those who had eaten fish before becoming lepers, the kind of fish consumed, and the variety of leprosy from which they suffered. The facts with regard to the white and coloured races are interesting. 95 per cent. of the white patients had eaten fish and 45 per cent. had partaken of cured fish. Amongst the coloured races only 30 per cent. had ever tasted fish of any sort and only 10 per cent. cured fish, and there was this result, as shown by the statistics, that there were fewer cases of leprosy in the asylum amongst those who had habitually eaten fish than amongst those who had not. These observations would seem to disprove the theory enunciated by Mr. Hutchinson and it will be interesting to observe whether Dr. Turner's conclusions are supported by other authorities.—*Lancet*, Feb. 27, 1904.

Renal Hæmaturia Produced by Terebene.

THE attack now to be described was not the first of the kind which the patient had experienced, for at Wei-Hai Wei in July, 1902, he suffered to a slight extent from the same symptoms after taking three minims of "terebene" out of the same bottle. He did not pay much attention to the matter and the effects passed away in a few days.

The history of the present attack was as follows: The patient, aged 34 years, got wet through at Shanghai on the night of April 27th, 1903. On the evening of the 28th he felt ill, took five minims of "terebene" on a piece of sugar at 8-30 P.M., and slept well. On the morning of the 30th he passed the usual amount of urine and towards the evening he noticed his urine turning red.

Since the 30th. the urine was red and it was worst on May 3rd. He came to see me on the morning of the 4th. His temperature was then 99·8°F., and his pulse-rate was 94. He complained of pain in the small of the back and the neck of the bladder, with frequent micturition. The urine after standing for five minutes was of a fairly bright colour throughout. The deposit at the bottom of the glass consisted of numerous tiny bright-red blood clots. It contained albumin and under the microscope numerous blood corpuscles were seen.

After standing for six hours the urine showed three layers in a glass six inches high. The lowest layer, one inch deep, consisted of a thick pinkish-white deposit containing numerous blood cells; the middle layer, four inches deep, consisted of a turbidity of a pinkish white colour, also containing numerous blood cells; the top layer, one inch thick, was of clear red-stained fluid, with very few blood cells. On the 5th his temperature was normal and he passed 43 ounces of urine from 6 P.M. on the 4th to 6 P.M. on the 5th. The urine was now not nearly so bright as before; it contained less deposit and no clots.

From the 6th onwards he passed plenty of urine, the blood in which steadily diminished. He remained in bed and on low diet until the evening of the 9th when his temperature rose to 99·6° and his pulse-rate to 100. His face, trunk, and extremities were thickly covered with a most pronounced urticarial rash, the wheals being exceedingly large. The dermatitis caused œdema of the eyelids and face so that it might at first sight have been taken for the onset of an acute attack of Bright's disease. I could not trace this attack to any error in diet; it lasted two days and then entirely disappeared. On the 13th there was no albumin in the urine. On the 15th the urine was alkaline, with no deposit, no phosphates on heating, and no albumin. The patient was then discharged to duty and as some anæmia was present an organic salt of quinine and iron was given. On the 21st the urine was alkaline and of a bright amber colour; it deposited phosphates on heating but there was no albumin.

The treatment consisted of rest in bed and milk diet without solid food. Barley water was also given and ice was applied to the perineum.

It is difficult to say whether this was a case of renal hæmaturia or what is called "strangury" (hæmorrhage from the neck of the bladder). As the blood was uniformly mixed with the urine and as the urine was of a bright red colour and contained clots I think that the hæmorrhage was from the kidneys. The pain at the neck of the bladder might have been due to irritation from urine. The drug which produced these effects was clear in colour with a taste of turpentine but scented and of a syrupy consistence. It was purchased at Brompton, near Chatham, and was labelled "pure terebene." The dose to be taken was not mentioned on the label. There was no return of the symptoms during at least the ensuing three months.

H.M.S. *Alacrity*, China Station.—*Lancet*, March 5, 1904.

Therapeutic Massage.

Carlo Colombo (*Gazz. Med. Italiana*, December 17th, 1903) gives an account of numerous experiments on the effect of massage, and deduces from them the following conclusions: (1) After massage of the muscles there is always a rise of blood pressure, which is greater or less according to the greater or less extent of the body surface to which the massage has been applied (except when the abdominal surface has been massaged). (2) The increase of pressure is found in all energetic forms of massage of the muscles, varying in degree according to the method employed: With deep friction, from 65 mm. to 100 mm. of mercury; with kneading, from 63 mm. to 105 mm. of mercury; with percussion, from 65 mm. to 115 mm. of mercury. After percussion the increase of blood pressure reaches the highest point, but the subsequent change from this high pressure to normal limits comes more quickly after percussion than after deep friction or kneading. (3) Light and gentle massage in the form of stroking and vibrations provokes a very slight increase of blood pressure, sometimes almost imperceptible. This is more noticeable in massage of the muscles of the limbs and back than in abdominal massage. (4) Mixed massage of the muscles of the limbs and of the back, followed energetically with all the manipulations (deep friction, kneading, and percussion), produces a rise of blood pressure (from 64 mm. to 100 mm. of mercury) which lasts for a considerably longer time than that caused by any one of the methods used separately. This elevation does not reach beyond that caused by percussion alone. (5) Energetic massage of the abdomen always causes a distinct lowering of the blood pressure (from 65 mm. to 50 mm. of mercury) whatever form of massage is employed. (6) The effect of mixed general massage, extended over the whole surface of the body (limbs, back, thorax, and abdomen) and applied energetically with all the masso-therapeutic manipulations (deep friction, kneading, stroking and percussion) are complex and vary according to whether the massage of the abdomen precedes or follows that of the muscles of other regions. In both cases there is a moderate rise of blood pressure (from 60 mm. to 85 mm. or 95 mm. of mercury) which returns gradually to normal limits in the first case, and in the second case falls suddenly (to 75 mm. of mercury) before becoming normal. (7) The pulse, the respiration, and the rectal temperature follow in every case an opposite course, but with an intensity proportional to that of blood pressure. The more the blood pressure rises the more the pulse frequency, the rate of respiration, and the rectal temperature diminish and *vice versa*. There is, however, an exception to this rule in the case of gentle massage (stroking and vibrations) to whatever part is applied, whether to the abdomen or to the muscles. In this case there is an increase of pulse-frequency, of respiration-rate, and of rectal temperature, although the blood pressure is raised.—*Brit. Med. Journ.*, Jan. 16, 1904.

An Early Pharmacopœia.

A VERY interesting old volume has been submitted to us for inspection by Messrs. Morgan, Marshal, and Co., of Queen Victoria-street. It is a quarto copy of the *Pharmacopœia* dated 1677. The name of the original owner is written on a blank page within the cover, "William Shaw, 1678." and below this appears the name of "Benjn. Blake Wills, 1866" with the note, "Saved from destruction." After the title-page, *pharmacopœia Collegii Regalis Londini*, is a page of dedication to King Charles II., "*Dei Gratia Angliæ Scotiæ, Franciæ, et Hiberniæ Monarchæ.*" Then follow four pages of a dedicatory letter to James I., which is evidently a reprint from an earlier *Pharmacopœia*. The names of the President, Fellows, Honorary Fellows, Candidates, and Licentiates are printed, the Christian names in most instances being Latinised, though some are left in familiar English form such as Thomas, Samuel, Daniel, Nathan, Elisha, and Nathanael (*sic*). Sir George Ent was the President when this *Pharmacopœia* was issued, but amongst the Fellows here enumerated are to be found the names of no less than 15 presidents of the Royal College of Physicians. Apart from this claim to distinction, many of the names are of individual interest; thus we find the Marquis of Dorchester, who presented his library to the Royal College of Physicians; Francis Glisson, whose name is perpetuated in Glisson's capsule; and Nathan Paget, who was an intimate friend of Milton and was intrusted with the responsible task of selecting a wife for the blind poet. William Sydenham is to be found amongst the *Permissi* or *Licentiates*, from which class he never emerged. It would be interesting to compare the list of simples included in this volume with that at present official but this would involve much labour and would not, perhaps, tend to edification. It would be easy to express surprise at the credulity displayed in the lengthy list of animals and substances of animal origin employed in the past but an uneasy doubt as to the opinion of posterity with regard to some modern articles leads to humility and charity. More interesting occupation might be found in noting the frequent mention of drugs which are still commonly prescribed and to which experimental work has been able to ascribe definite pharmacological actions. None will regret that the *Pharmacopœia* of modern times is constructed upon more simple lines. Polypharmacy was rampant in 1677, as may be seen in the formula for "*Theriaca Andromachi*," which contains between 60 and 70 different articles, with the direction, "*Misce secundum artem.*" Several other copies of the *pharmacopœia* of this date are known in libraries and in private collections but some differ in having a longer list of booksellers on the title-page and in the correction of a misprint on p. 207, here rendered 209. The copy before us is in good condition considering its age but it shows evidence of use in stains on its pages and in the detachment of a portion of its leather binding. We trust that it may find a resting-place in some library of similar work.—*Lancet*, March 5, 1904.

CLINICAL RECORD.

Indian.

A CASE OF CHOLERAIC DIARRHŒA.

BY DR. PRASANNA LAL KUMAR, L. M. S.

A Hindu lady aged about 32 was seized with purging and vomiting at about 7 A. M. on 24th January, 1904. Till 9½ A. M. she passed four stools and vomited twice or thrice. The first stool consisted of undigested food particles. I saw the last stool which was copious, slightly tinged with red. There was some sediment at the bottom and when stirred the stool exactly looked like water mixed with flour, but the colour was reddish. The stools were painless and gushing. The vomited matter consisted of yellow liquid. Tongue dry. Temp. 100·0 F. Pulse quick and small. Skin dry. No urine since the first stool. Aconite 6x was prescribed of which two doses were given till noon. At noon vomited again and the vomited matter consisted of very sour liquid, and since 9½ A. M. passed four more watery stools which were also sour smelling and like rice water in colour. There was slight griping pain round the navel. Temp. 103·0 F. Two days ago she had gone to a party and had taken a heavy meal consisting of pastry and cabbage and other rich articles. Had been keeping up till very late the two previous nights.

Nux. Vom. 6x was prescribed, the vomiting was checked and the stools became less frequent. At about 2 P. M., an involuntary stool in the bed clothes followed by violent cramps in the extensor muscles of the extremities. The toes spread apart and the whole body bent backwards so that only the heels and the head remained in contact with the bed. Pulse very quick and soft. At 2½ A. M., Secale 6x, one dose only was given. The cramps ceased about 10 minutes after and the pulse also improved.

At about 3 P. M., a copious stool was passed; it was flaky, and distinctly yellowish.

At 4 P. M., the cramps returned and she passed another stool in the bed clothes. The stool was of the same character as the previous one but less in quantity.

At 4½ P. M., cramps every 10 or 15 minutes though not so violent as before. Voice very faint and husky. Eyes sunken, tongue dry, hearing much impaired; could hear only loud words spoken at a small distance from the ear. Abdomen tympanitic. Pulse very compressible, quick and fluttering.

At 5 P. M., all the symptoms grew worse. The patient became almost unconscious. Dr. A. L. Sircar was called in for consultation. He advised to stop all medicine and to give a dose of puls. 6x if the purging returned. At 6-15 P. M. passed a stool in the bed clothes. The stool consisted of some fecal matter and was distinctly yellow. One dose of puls. 6 was given.

8 P. M.—Another stool consisting of a great quantity of yellow fecal matter. A little quantity of urine was passed with the last stool. By this time the pulse improved. So the medicine was not changed nor was it repeated.

Passed the whole night well.

25th January Morning:—No urine since 8 P. M. of the last night. Pulse 136, weak and compressible. No stool. No medicine.

3 P. M.—Pulse very weak and fluttering. Abdomen slightly distended, burning sensation in the stomach, no stool, no urine, thirsty, and suffering from nausea. I asked the advice of the late Dr. Sircar and he told me to moisten a few globules with a drop of Tinct. Camphor and to give only two globules to the patient.

5 P. M.—Pulse decidedly better and tympanites disappeared. A little sago water mixed with a few drops of lemon juice and a few grains of salt was given.

26th Jan.—No urine was passed till 4½ A. M. No medicine. Sago water for diet. Passed urine 2 or 3 times.

27th—No urine from the morning. Complained of pain on both the hypochondriac regions. Thirst and slight nausea. With the advice of Dr. Sircar one cubeb was given to the patient to chew and then to throw it away. Passed urine in the evening.

28th—There was no pain, or nausea, and the thirst very slight. The patient gradually recovered. Her appetite improved, and after 3 days more soft rice and *gandal* soup was given to her.

Foreign.

PHOSPHORUS CASES.

DR. SAMUEL J. HENDERSON, BAD AXE, MICH.

CASE I.—Mrs. L., aged 61 years, a tall woman has been complaining for several years. Father died of apoplexy.

Vertigo on rising in the morning and after lying down, as if turning.

Fear in walking alone, desires to take hold some one.

Fear as if something would happen.

Fear of losing consciousness.

Confusion at times in base of brain extending over head.

Rushing in head.

Full, slow pulse.

Losing flesh.

Always better walking out doors and worse in the forenoon.

Phosphorus 19m cured the above symptoms and reproduced an eruption on the elbows that had been suppressed with ointments many years ago. Another dose of Phosphorus 19m cured eruption, all in about one hundred days.

CASE II.—Mr. S., age 60 years.

Dry cough for several months, worse lying on the back.

Shortness of breath, worse riding, walking.

Great tightness of chest as if bound by a band.
Vertigo, worse riding, and after riding.
Blindness after riding.
Sharp pain in heart and left shoulder.
Pressure around heart, cannot lie on left side or back.
Aching pain at angle of left scapula, worse by motion.
Abdomen bloated.
Pulse accelerated by raising the arms.
Numbness of arms and fingers.
Great weakness, worse forenoon.
Dreams all night about the dead.
Phosphorus 1m, 19m and 50m at long intervals cured.

CASE III.—Oct. 3, 1903. Mr. B., aged 40, an athletic fellow, straight as an arrow.

Pneumonia lower right lobe tending to left side.

Soporosis condition.

Dry cough.

Tightness of chest as if bound by a band, around lower part of chest.

Respiration difficult, short, quick.

Cannot lie on left side or back.

Great weakness. Phosphorus 19m.

From a relapse on the 13th due to his own indiscretion, Phosphorus was repeated. It produced a vesicular eruption on body, burning like fire.

Was doing business again in a month, but had lost forty pounds in weight.

Had the second dose been given soon after the first, the relapse and violent burning eruption might not have occurred.

CASE IV.—Mrs. S. A., tall slim stoop-shouldered woman 69 years old.

Fluttering around the heart, as if going to die, worse morning after rising.

Feeling as if she wanted to get away somewhere.

Fear as if something is going to happen.

Dizziness, staggering, swimming as if on water.

Cannot lie on left side.

Chilliness toward evening.

Phosphorus 19m cured in a short time.

The repertory work begins with, fear as if something would happen, in Mrs. L———, and Mrs. S———, and constriction as if by a band around chest, in Mr. B——— and Mr. S———.

[If every reader would mark these symptoms as verified in his *Materia Medica* it would prove a valuable addition. That was the first thing Hering did after reading such cures and was the beginning of that magnificent work, "The Guiding Symptoms."—ED.]—*The Medical Advance*, January, 1904.

A CASE OF PARALYSIS CURED.

WILLIAM A. GLASGOW, M. D., MISSOULA, MONT.

Mr. J. J., age 24, has been paralyzed since December, 1902.

PREVIOUS HISTORY: Is a locomotive fireman and has always had splendid health until the time above mentioned, when he was admitted to the Railroad Company's hospital for treatment. They treated him for several months when he was discharged as incurable.

PRESENT CONDITION; When called to the case the following symptoms were noted:

Violent tearing pains in frontal region, < at night, < by motion and bright lamp light.

Profuse perspiration about the head which stains the linen yellow and also has a very strong odour not unlike garlic.

Breathing: irregular, short, spasmodic; pulse average about 95.

Appetite almost gone, no desire for any kinds of food, the odour of cooking nauseates.

Very constipated during early part of sickness, but now stools are involuntary.

Urine: scanty, high colored, odour like cat's urine; albumen in variable quantities, urates increased.

Sleep: restless, tosses about and cannot get to sleep although sleepy. Sleeps better during the day than at night.

Profuse perspiration which aggravates all the symptoms, especially worse at night. He feels exhausted upon waking.

A macular eruption was discovered over back, arms and face, but no itching.

There is complete loss of all the voluntary muscles of the body. The patient cannot even move his head.

A few other symptoms illicit and (by the way the ones that indicate the remedy); are < in cold, wet, cloudy weather; soreness of teeth with salivation, teeth feel too long; sore throat and former mucus patches in the mouth all characteristic of syphilis which he confessed had been contracted eight months ago.

Mercurius vivus, 3x, was given twice a day for three weeks, under which he improved rapidly for a while and then came to a standstill, when he was given one powder of *Mercurius vivus* 1 m (B. & T) and placebo, quantum sufficit.

That is all the medicine he has had and today he is up, working on the railroad without any symptoms of his former illness remaining. This is a case that a freshman in a homoeopathic college could have cured but was considered incurable by some good old-school physicians.—*Medical Advance*, February, 1904.

"Gleanings from Contemporary Literature."

FOOD AND DRINK, NUTRITIOUS AND OTHERWISE.

By R. E. DUDGON, M. D.

THERE is one thing that conspicuously distinguishes savage and civilized man from the brutes, and that is this. While what we contemptuously call the "inferior animal" is content to subsist on pure nutriment, each selecting, with unerring instinct, the kind of food adapted to its nature, "the superior animal" eats, drinks, and otherwise indulges in some natural or artificial substances which are not of the nature of nutriment, but which act on certain parts or organs of his body no way concerned in the functions of digestion or assimilation, which, indeed have a more or less toxic effect on the organs to which they have an elective affinity. They are not, indeed, consumed with any idea that they contribute to the growth or nourishment of the body, except in the case of some of them which are believed, with or without reason, to be stimulants of the appetite, digestion, or assimilation; but they are chiefly used for certain pleasant effects they produce on the sensations, or for their exhilarating action on the mind and disposition. All these non-nutrient substances can be consumed by some persons in considerable quantities for a long time without apparent ill effects, but for all that they are toxic agents, as is evident from their prejudicial action when taken in excessive quantity by all, or even in moderate quantity by sensitive persons. The derangements of health caused by one or more of these non-nutrients are sometimes very considerable, but the source of ill-health is often entirely unsuspected by the patient and overlooked by his medical adviser. It would be utterly vain to attempt to persuade people to abandon the consumption of all substances not of a purely nutritious character. They would say, to do so would be to deprive life to half its charm, and so perhaps it would in our very artificial way of feeding. The fact is, in these highly civilized times eating has become such an important function, that, if not the chief occupation of most persons, it is considered the indispensable accompaniment of some of the momentous operations and undertakings of public life. And even in ordinary private life meals are often the chief and most beloved events of the day, and are often made the occasion of social gatherings. Hence as many as possible are crammed into the twenty-four hours. Breakfast, luncheon, and dinner are the three chief meals, when considerable quantities of elaborately cooked dishes are consumed, smaller intermediate refectations are often partaken of, such as early cup of tea, afternoon tea, and a glass of something warm and spirituous with a biscuit or cake before bed. As it is impossible that a healthy appetite can develop and abide with such little repose of stomach, it is found necessary to create an artificial appetite by means of various stimulants, spices, sauces and drugs which enable the stomach to receive a greater quantity of food than it is able to digest, or to assimilate. Thus the transformation of food-eating into social function derogates from use as a mode of conveying nourishment to the system when it is required, and so we have our periodical feasts partaken of without natural appetite, and attended by overwork of all the organs of digestion and assimilation, which must inevitably result in disease and often in an overgrowth of fat. Reason and inclination would suggest eating and drinking when we are hungry, and thirsty; civilized custom compels us to eat and drink at certain hours, whether we require or desire it or not. The semi-civilized Emir of Afghanistan said to his English lady doctor: "Why must you go?" "It is the hour for

lunch." "Are you hungry?" Not the least." "Then why should you eat when not hungry?" To this there was, of course, no rational answer. "The French are a set of barbarians," wrote the banished Scotch nobleman to his friends. "they never drink unless they are dry!" So our boasted civilization compels us to eat when we are not hungry and drink when we are not thirsty! The consequence of this tyranny of custom is that a multitude of quite respectable and amiable people suffer from dyspepsia, gout, and obesity, and cannot understand why they should be so afflicted, when their habits are so regular, and their food and drink so carefully selected and so wholesome. Much superstition prevails with regard to eating and drinking, and from this the medical profession is not wholly exempt. "He was able to take a considerable amount of nourishment" in a Bulletin, is a phrase that sends a thrill of delight through the breasts of anxious friends, when, perhaps, the true statement should have been: "At the urgent request of his attendants he forced down a quantity of food, which did him no good, but the contrary." Or the poor dyspeptic is held to be not at all ill if he takes regularly his three substantial meals a day, when, perhaps, he would be much better if he omitted one or two of them. I don't think the heroes of the Homeric poems, who performed such prodigies of strength and endurance, had their three meals a day. Homer, who tells a great deal about their feasts, never says anything about any meal except their dinner or supper. He says nothing about breakfast or luncheon, but he gives us minute descriptions of the one great meal of the day. And to our modern idea this meal was more remarkable for its simplicity and profusion than for its inviting character. I may here give an account of two dinners circumstantially described in the *Iliad*. The first is that given by Agamemnon to King Idomeneus, Nestor, the two Ajaxes, Diomed, Ulysses, and Menelaus, eight in all, including the entertainer. A fat, five-year-old bull was killed and flayed, and after the usual portions, viz., the thigh-bones and some fat and bits of flesh, were burned as a sacrifice to the Gods—for the Homeric dinners never neglected this pious duty, and often said a grace before meat of a length to satisfy a Scotch presbyterian minister—the inward meats, to wit, the liver, heart, sweetbread, and kidneys were first eaten, by way of *hours d'œuvres*, I presume; then the rest of the beef was cut up small, put on small spits or skewers and roasted, apparently by the guests, and eaten, "so that all were satisfied" (*Il. ii.* 420). The second is a more detailed account of the feast given by Achilles to the ambassadors of Agamemnon. The guests were Ajax, Ulysses, Phoenix, the two heralds, and the entertainers Achilles, Patroclus, and Automedon, eight in number. Patroclus was directed by his friend to set a large bowl of wine mixed with less water than usual, as the guests were such dear friends, and to give each of them a cup. Patroclus then set the choppingblock in front of the fire and laid on it the loin of a sheep, the loin of a goat, and a chine of fat pork. Automedon held the meat while Achilles chopped it, afterwards slicing the chops and putting the pieces of meat on spits or skewers, while Patroclus kept up the fire. When the flame had died down, he spread the cinders out and laid the spitted meat upon them. Then he arranged the spits on the spit-rack and sprinkled the meat with salt. When the meat was roasted he set in on plates and handed round bread in baskets, and Achilles dealt their portions out to the guests (*Il. ix.*, 305). When the guests were more numerous the feast did not differ except in quantity from the more select dinner. The author (or authoress, as Samuel Butler says) of the *Odyssey* gives a circumstantial account of the last feast of Penelope's suitors. Their number was 108, and the amount of food was considerable, to wit, three pigs, a good many goats, probably not less than a dozen, as they were brought by two herdsmen, one lot requiring two shepherds to bring them along;

and one barren heifer. The animals were brought alive into the dining-hall, there slaughtered and skinned, and the skins apparently thrown about the room, as during the killing of the suitors one hid under the freshly-flayed heifer's hide. The inward meats were first cooked (probably boiled) and handed round. Then outer meat was cut up and roasted on skewers, and every guest received his portion, including cups of wine mixed with water, and feasted to his heart's content (*Od. xx.*). At this banquet the guests were waited on by servants, but at some other feasts the bits of meat were apparently roasted by their eaters. They were in fact their own cooks, reminding us of the feast boasted of by the Welshman: "I had 300 guests at dinner, and there were 300 cooks." "Yes," said his friend, "I know, every one toasted his own cheese." Well if that was so, the Welsh feast was Homeric as regards the cookery. But when we compare the simple classical banquet of the time of the Trojan war with the elaborate feast of modern times, we are struck by its monotony, and total lack of variety, and disgusted by its savage simplicity. The dining room was at once a slaughter-house, a butcher's shop, and a kitchen; the cookery of the rudest, the only condiment mentioned is salt, and the only variation from freshly killed meat, lumps of bread, probably made of barley-meal, as that is what Minerva calls "the staff of life," (literally "the marrow of a man") and which she advises Telemachus to provision his ship with (*Od. ii.*). Barley is not much used for bread-making nowadays except in Scotland, where bannocks and scones of barley-meal are still consumed. Barley in our civilized age is mostly used to manufacture whisky and beer, which may be the "staff of life" to the "trade," but are very much the reverse to their customers, and are apt to take the marrow out of the man. In the feasts enjoyed by the son of Atreus and his companions there was no soup, no fish, no vegetables, no *entrees*, no sauces, no puddings, no pastry, no fruit; nothing indeed but ill-roasted meat and the internal organs (probably boiled) of newly slaughtered animals. The wine was probably too strong or too sour to be drunk alone, so it was always mixed with water. What a contrast to a modern banquet! I do not give this description of Homeric banquets to show off my classical learning; for, alas! I have none, and therefore have to take my lore from one of the numerous translations, this time my late friend, Samuel Butler's. I only wish to contrast the method of feeding of Homer's heroes with the modern plan. Homer's warriors had probably only one meal a day. Agamemnon, indeed, on one occasion orders his men to get their morning meal, but that was apparently their principal or only meal, taken early, as they were to go off fighting immediately. As they were usually so busy fighting they could not be certain of enjoying even the one meal every day, so they would likely act on the principle of that distinguished warrior of a later age, Dugald Dalgetty; "When a cavalier," he says, "finds that provant is good and abundant, he will do wisely to victual himself for at least three days, as there is no knowing when he may come by another meal." Hunger would, no doubt give them the relish required for the consumption of an adequate supply of their nutritious but unsavoury food. The modern consumer of three square meals a day is never hungry, only greedy. He does not like to miss one of the meals prescribed by custom, but as he comes to these without appetite, he must coax his gustatory sense by the devices of scientific cookery and stimulating drinks. I don't suppose Homer's heroes ever suffered from dyspepsia, gout, or any of the many ailments we moderns owe to our indulgence in too heavy and too frequent meals. If there were fewer skilful cooks to tempt us to over-eat by their tasty confections, there would be less work for doctors to attempt to undo the mischief done by yielding to culinary seduction.

The main difference between the Homeric feast and the modern banquet is, that the former consisted of pure and unsophisticated nutriment, whereas the latter is composed of a great variety of different kinds of vegetable and animal food rendered tasty by scientific cookery, which employs many substances, not nutritious, but introduced for the purpose of stimulating the jaded appetite by pleasant flavours and artificial savours, to eat more than would be relished in a simpler diet more simply prepared. The culinary art seems to have attained a great development among the ancient Romans, and the feasts of Lucullus and other Roman gourmets were distinguished for their elaborate and expensive character; though the articles they ate and the flavours they delighted in would hardly be relished by modern taste. Nightingales' tongues, the larvæ of the stag-beetle, and pullets stuffed with assafœtida would not be appreciated in a modern *menu*, and probably many of our favourite dishes and sauces would have been as repugnant to the old Roman.

There are, of course, many who subsist on the simplest food either from choice or necessity; but most of those who can afford it, unless their feeble digestive powers forbid it, adhere persistently to their three "square" meals a day, and consider it almost a dereliction of duty to themselves if they neglect to partake of all the meals at the regulation hours prescribed by custom. To many, these meals are the chief; to some even, the only pleasure in life.

"We eat and sleep; good folks, what then?"

Why then we eat and sleep again."

This would accurately describe the whole existence of such slaves of convention. But there are many who perform much useful work who are also addicted to the pleasures of the table, and who eat and drink much more than is absolutely necessary. If they partook of nothing but absolute nutriment cooked in the simplest fashion they would not be disposed to eat too much. It is the cunning art of cookery, with its non-nutrient adjuncts of *recherche* flavours and piquant sauces that seduces them to take more than nature requires or their digestive powers can dispose of. It would be a fruitless task to try to persuade people to adopt a purely nutritious diet and to forego the non-nutrient adjuncts. They are so accustomed to the latter, that they would bitterly complain that they could not eat the unsavoury food, and would point-blank refuse to abandon what gives the sole relish to their repast. I propose to point out the toxic effects of some of the non-nutrients that are commonly taken in or along with or in substitution of really nutritious food; but whether my doing so will have any effect in inducing them to adopt a simpler and more wholesome dietary I am not sanguine enough to expect. As a rule patients expect the doctor to prescribe some medicine which will enable them to eat and drink as much as they like without any harm to themselves; and if the doctor, rightly divining the true state of affairs, suggests that a simpler and less abundant diet, and the leaving off of some favourite but unwholesome dietetic indulgences would do the patient more good than any medicine, he might feel inclined to resent such advice as not being what he wanted, and he might even show his contempt for the doctor after the manner of the patient in the following story: A gentleman from the north—evidently a characteristic specimen of the "unspeakable Scot" of the cross-grained English author—was persuaded by some friend to take advantage of his visit to London and consult an eminent physician of the metropolis. The great man, after hearing the symptoms and enquiring into the habits of the patient, advised him to eat less, to drink no beer or whisky, to cease smoking, to rise early, take plenty of exercise and altogether make a complete change in his diet and regimen. The patient rose to go. "My fee," said the eminent consultant, "is two

guineas." "What for?" said the patient. "For my advice," said the doctor. "But," said the patient, "I don't intend to take your advice, so I won't pay you anything." And the doctor was left lamenting the patient's want of appreciation of his honest and excellent but unacceptable advice. It would be hard upon doctors if patients were to form their own estimate of the value of the medical advice given, and bestow or withhold the fee according as they intended to take or neglect the advice. If that plan were to be generally adopted without protest, we might eventually see patients who were, or who fancied themselves, worse from following the doctor's prescriptions, demanding back the fees they had given for advice they had followed with such unsatisfactory results. But, fortunately for us, we have not yet arrived at the time when the doctor's advice shall be estimated and remunerated at its intrinsic value, as though it were like material goods bought at a shop. Physicians in the present day are not held in the same esteem as their forbears enjoyed, they have so much greater rivalries to encounter. Multitudes of possible patients are attracted by the promises of the professors of "Faith Healing" and "Christian Science," and by the quack-medicine industry. I have not been able to escape infection by the epidemic of "fiscalitis" now rampant in this country, and, although it is not usual for doctors, who are the most cosmopolitan and unemotional of men, to profess strong political opinions, as a patriotic imperialist and in a certain sense a "producer," I am decidedly in favour of "protection" for my own business; while, as a consumer, I remain a convinced "free-trader" in respect to the wares of all other producers. With these sentiments, I claim from an enlightened Government protection from the fiscal wiles of the manufacturers of quack medicines, who "dump" down, *coram populo*, their worthless imitations of true medicine, and scatter flamboyant advertisements recording "marvellous cures" of all diseases from corns to cancer in every newspaper and magazine, on street hoardings, in railway carriages and stations; and disfigure our landscapes with monstrous boards inscribed with recommendations to try their infallible pills and syrups. The modest and long-suffering representatives of legalised medicine, to whom the slightest approach to *réclame* is forbidden by their own self-denying ordinances, see their patients in *esse* and *posse* alienated from their legitimate advisers by the specious promises of the advertising quacks, and are powerless to stay the evil. Surely the legally qualified members of a useful profession are as well entitled as the makers of mere goods to some "preferential tariff" to protect them from the ruin with which they are threatened by the "free imports" of the spurious remedies of unlicensed practitioners. But no Government will ever grant to our most important and indispensable calling the protection some governments are willing and eager to accord to the representatives of the *labor improbus* of manufactured goods and even raw materials; so we must fight for our own hand, or rather we must grin and bear our unprotected yet not altogether unhappy lot.

Faith in medicine is much weakened by the confident assertion of the bacteriologists, who claim to be the true exponents of medical science, that diseases are caused by the ubiquitous microbe, and can only be cured by some wonderful antitoxin prepared and administered by an expert, i.e., by a bacteriologist. Then modern surgery is no longer the handmaid, but the successful rival of therapeutics, and patients are only too willing to consent to the rapid and painless removal of an organ, which thenceforward will give them no trouble, rather than permit a physician to try to cure it by the slower and more uncertain action of medicine, with the ever-present liability to a recurrence of its malady.

But I am rather diverging from my theme, which is concerned with the articles of consumption which are not food, but which are taken

with or instead of food. The most used of these is undoubtedly alcohol in its various disguises, as wine, beer, spirits and liqueurs. There is no need to dwell on the deleterious effects of alcohol. It is not a food, does not facilitate, rather retards, digestion, and serves no useful purpose either when drunk with or without food, or when mixed with food, as it often is by way of improving or flavouring many dishes. Alcohol has of course a very limited use as a medicine; it is only in novels that it performs those wonderful cures which excite the doctor's envy. The regular use of alcoholics, even in moderate quantities, is unfavourable to longevity, as the statistics of insurance offices which offer special terms to abstainers prove, and it is the cause of many of the diseases that afflict humanity. Unfortunately it is to many pleasant to taste, and liked for its stimulating properties. When we reflect on the fact that the people of this country spend £180,000,000 on this poison, which does them no good in small quantities; impairs digestion, deranges the circulation, slowly undermines the functions and the integrity of liver and kidneys, and is a prolific cause of gout, rheumatism, pulmonary delicacy, and premature death in so-called moderate quantities; whilst it is the frequent cause of incurable disease of liver, kidneys, lungs, heart, and nervous centres, and it is the most fertile cause of domestic unhappiness, poverty, crime and insanity when taken in immoderate quantities, we should welcome every effort to diminish and even to abolish the use of such an enemy to the well-being of mankind. But the attempts made to check the consumption of alcoholic drinks have hitherto met with little or no success, for the money spent on this pernicious liquor increases from year to year; and though temperance societies abound, the consumption of alcohol per head of the population grows every year greater, and the only people who profit by it are the brewers, distillers, wine merchants, and their satellites the publicans and grocers, and perhaps I should add the doctors and the quack-medicine vendors, whose business would decline if the people became more sober. The medical faculty have always disinterestedly sought to prevent diseases, the treatment of which is the source of their own livelihood, and have with few exceptions, persistently pointed out the evils of alcohol-drinking, and endeavoured to promote abstinence from, or extreme moderation in the use of intoxicants; but in the face of the above facts it must be confessed that they have not been as successful as could have been desired.

Alcohol is not drunk pure. It is usually mixed with something to disguise its taste, to mitigate its harshness, or to render it more agreeable to the palate. In beer it is made bitter by hops, which have medicinal and therefore toxic properties of their own, which no doubt add to the hurtful effects of drink. The narcotic action of hops is well known; a hop-pillow is frequently employed to induce sleep in persons suffering from insomnia. The hop is not now used as a medicine, but formerly it was, and if medicinal in appropriate cases, it must be pathogenic if taken largely when not indicated. At all events, it adds to the soporific quality of the alcohol in beer. Probably its specific name "*lupulus*," i.e., "little wolf," implies a suspicion of its hurtfulness, and possibly some of the evil effects of beer-drinking may be owing to its presence in the liquor. Arsenic, with which beer is often contaminated, and whereby its consumers are poisoned, cannot be considered as a necessary or designed constituent of beer, but has gained admission to it by accident or carelessness, so I only mention it here in order to point out that philanthropists who are accused of wishing to "deprive the poor man of his beer," may really be unconsciously endeavouring to prevent the poor man being poisoned. A commission lately appointed to report on the subject, tells that arsenic is found in many of our food and drink, sometimes in quantities sufficient to cause

poisonous effects. They recommend that no article of consumption should be allowed to be sold that contains more than $\frac{1}{100}$ th of a grain of arsenic in a gallon of liquid or pound of solid food. Methinks it would have been better to prohibit the sale of all articles of consumption containing any arsenic at all, as the quantity they allowed would certainly cause toxic effects in some susceptible individuals.

Wines owe their morbidic effects and characteristic action to the alcohol they contain, which is produced by fermentation in the grape-juice of which they are generally composed, or by added alcohol in the stronger sorts. The ordinary spirits, such as brandy, whisky, rum, gin, arrack, etc., are merely diluted alcohol variously flavoured, and are pernicious in proportion to their alcoholic strength. The liqueurs, such as curacao, noyau, chartreuse, benedictine, cherry brandy, sloe-gin, kirsch and the rest, are strong spirits sweetened and flavoured with more or less innocuous additions. Probably the most noxious of these is absinthe or vermouth, which has the deleterious action of its alcohol intensified by the admixture of wormwood, the *artemesia absinthium*, a plant which has a baneful effect on the brain and spinal cord, and is a frequent cause of epileptiform convulsions, loss of memory, and even idiocy, in those addicted to its use. Though some persons can take alcohol in considerable quantities and for prolonged periods with apparent impunity, its pernicious effects on many are so well known that it would be more prudent to avoid it altogether, whether during meals or at any other time. I know this is a "counsel of perfection," that will be generally disregarded, but I give it as my honest opinion—*valeat quantum!*

The use of Salt as an adjunct to food is nearly universal, and has been practised from the most ancient times—we have seen that it was the only condiment used at the Homeric feasts. We are so accustomed to it that to most of us our food would be quite insipid without it. Though a non-nutrient mineral, it is doubtless a necessary addition to nutrient food. Most animal foods contain a quite sufficient amount of salt for the requirements of the body, but vegetable foods are often destitute of any saline constituent, and require it to be artificially introduced. Accordingly, while carnivorous animals do not care for salt, graminivorous animals are quite fond of it, and stock-breeders see that their cattle, horses, and sheep are supplied with it. And yet, apparently so necessary for the digestion and assimilation of our food and for the repair of our organs and tissues, and so innocuous when taken in small quantities, salt can and does cause a good many pathogenic effects when taken in excessive quantities. When from lack of fresh food the diet consists chiefly of salted meat or fish, scurvy, and if we are to credit Mr. Jonathan Hutchinson, leprosy is apt to ensue. But there are many persons who eat an excessive amount of salt without being obliged to do so, just because they like the taste, and they will sprinkle all their food, even their bread and butter, plentifully with this mineral. This often causes disagreeable symptoms. Liedbeck says it causes pain after eating, foetor of breath, fever, thirst, and soreness at the corners of the mouth. Burnett believed that excessive salt-eating was responsible for cataract and premature senility. I have found that some who indulge in eating too much salt are liable to a peculiar dry annular eruption, especially on the lower parts of the abdomen, the insides of the thighs, and the scrotum, and that an extreme liability to catch cold is sometimes connected with this habit. Dr. W. B. Parsons considers it certain that the long-continued and excessive use of salt will cause irreparable injury to the brain, indicated by loss of memory, convulsions, vertigo and hallucinations. Many other observers have recorded other disagreeable effects from the same cause. On the other hand, complete deprivation of salt has been held to be the cause of scurvy and tape-worm. On

the whole, the evidence is in favour of the injurious effects of excessive salt-eating, and it would be only prudent to avoid taking with our food more salt than the system requires, which is a very small quantity.

There are substances used in the preparation of food which are of a medicinal, and therefore toxic character. Such are pepper, cayenne, mustard, nutmeg, pimento, cinnamon, horse-radish, tarragon, vanilla, garlic, saffron, turmeric, cochineal, etc. But these things, mostly used for flavouring or colouring food, are generally employed in such small quantities and so rarely that they seldom produce any of their pathogenic effects in those who use them. I have known cinnamon in a cake strongly flavoured with it, produce some symptoms of a very disagreeable character. Vanilla, as Hahnemann told a friend of mine, caused in him some untoward symptoms. C. Hering told me that he could not take mustard with his beef without suffering for it. But most persons can take these condiments in their food with impunity.

Tea is in no sense a food, it is only a medicine, and like all medicines, when taken in excessive quantity, causes various derangements of the health, such as dyspepsia, neuralgia, neurasthenia, palpitation of the heart, and insomnia. When our great fiscal revolutionist proposes to make up to the working man for his dearer food by giving him cheaper tea, that is something like giving a stone to him who asks for bread, which is not a very commendable transaction. The milk and sugar, with which tea is usually combined, render the combination, to a certain extent nutritious but the tea in the compound does not contribute to its nutritious property, though the adjuncts may diminish the toxic properties of the tea. But, with or without the milk and sugar, tea is undoubtedly the cause of much ill-health in many who indulge in it immoderately, and there are many who cannot drink it even in moderate quantity without suffering.

Coffee is not a nutriment. Its toxic properties are even more pronounced than those of tea, and are of much the same character. Many of course, can drink it with impunity, but it has distinctly toxic effects on some people. Hahnemann has given a detailed account of its injurious effects on those who indulge unduly in it. He would have greater opportunity for observing its effects in Germany, than we have here, as coffee is almost an universal beverage in the Vaterland, and tea, in his day, was hardly used. It is probably chiefly owing to Hahnemann's denunciation of tea and coffee that his followers were led to substitute for them cocoa, which is not known to cause any serious derangement of the health, though many dislike its taste. Though cocoa contains an alkaloid almost if not quite identical with those of tea and coffee, it acts more as a food than a stimulant, probably owing to the fat and albuminous matter it contains. Hahnemann says it is a pure food. In the form of chocolate highly flavoured with vanilla or other spices it may, as Hahnemann asserts, be prejudicial to some sensitive persons.

Paraguay tea or Mate, an infusion of the dried and powdered leaves of the *Ilex Muts*, is not much used in this country, though an attempt is being made to substitute it for tea and coffee. It is a general beverage in Paraguay, Argentina, and other parts of South America. It is no doubt medicinal, and not nutritious. It has a remarkable stimulating and sustaining effect, and it enables workmen to perform a great amount of hard labour without food. These properties show that it acts energetically on the nervous system, and though we know as yet little about its pathogenic powers, these must be considerable, and must render it a dangerous beverage for sensitive subjects.

Coca, which is, or perhaps it would be more correct to say was, much used in the form of coca-wine, is well known to the homœopathic world under the name of *Erythroxylon Coca*, is a very powerful medicine,

and is equally well known to all medical men by its powerful constituent, cocaine. Its prolonged use in combination with alcohol must be dangerous.

Tobacco is not, of course, precisely of the same character as those substances I have been considering, as it is not consumed as an ingredient of food; but as it is taken into the system through the same channel as that by which food and drink enter, and to a certain extent takes the place of food, it could not very well be omitted from a paper of this sort. Smoking, chewing, and snuffing are the modes adopted for its consumption. Snuffing does not come into consideration here; snuff has often caused accidents by being adulterated by poisonous substances. Chewing is not much practised, except by sailors. I am not aware that serious injury to health has resulted from the nasty practice; but I can easily imagine that with his mouth occupied by a big quid, Jack may be unable to swear at the hardships of his lot as much as he would like to. It is chiefly by smoking that tobacco obtains admission into the human organism. At first it causes in the neophyte or at least in most beginners, much nausea and discomfort, but these gradually subside, as the smoker perseveres with its use, until at last its soothing and comforting action is only experienced. Those who smoke enormously or who are peculiarly sensitive to its toxic action, often suffer from distressing palpitation, loss of appetite, and a peculiar kind of amaurosis, owing to white atrophy of the retina, and even from angina pectoris and paralysis. Teste says: "All smokers of long standing, almost all—for I admit exceptions—have their slight or severe ailments, which would immediately cease were they to leave off smoking." There are many persons who—some of them in spite of their desire to become smokers—can never get over the pathogenetic effects of tobacco, and are consequently for ever debarred from experiencing its soothing joys. On the other hand, there are some who seem to be able to smoke perpetually without apparent injury. There are many varieties of tobacco, some containing a large amount of the poisonous alkaloid, nicotine, others almost destitute of that constituent. Cigarettes, which are the form most used by perpetual smokers, are usually made of tobacco of the mildest character, containing a very minute quantity of nicotine. But the cigarette smoker often makes up for the mildness of his tobacco by inhaling it into his lungs. By thus exposing a larger surface of his mucous membrane to the smoke, he gets more of the nicotine into his system than he would by the ordinary method of limiting the smoke to contact with the membrane of his mouth and nose. The amount of tobacco consumed in this country every year increases considerably. A few years ago there were few women who smoked, and they were chiefly old, "tobacco for the auld wives" as the old song says, but now many young ladies have taken to the practice, though it will probably be some time ere they can rival their Spanish and Russian sisters in this not very commendable accomplishment.

I do not expect to wean people from the universal habit among civilized nations of mixing their food with substances that are not nutritious; nor would I wish them to resort to the carnivorous monotony of the Homeric age. I have only attempted to indicate some of the common additions to real nutriment which are not nutriment, but which act on quite different organs and nerves than are concerned in the functions of digestion and assimilation, and which may produce undesirable symptoms and sufferings, which may be remedied by abstaining from the use of these non-nutrients. Medicine will be of no use for the removal of morbid states caused by the habitual indulgence in substances which exert a toxic action on the system, either by their intrinsic pathogenic power or by their excessive quantity, and it is the duty of the physician to ascertain

whether his patient's ill-health may not be owing to his use of one or other of the innutritious but pathogenic articles that are taken with, or as substitutes for real nutriment.

In this article I do not speak of the toxic substances with which food and drink are often contaminated, some purposely, others accidentally such as alum in white bread; salicylic and boric acids in milk and cream, ptomaines in tinned meats, copper in green peas and in food cooked in dirty copper saucepans, lead and zinc and pathogenic bacteria in water, various metallic and other poisons in wine and sweetmeats, the virus of the bee in honey, arsenic in beer and various fraudulent adulterations of food with unwholesome substances. These belong to quite another category of the noxæ to that we have been considering, and as they often cause serious ill-health and sometimes even death, they are well worth the attention of medical men engaged in endeavouring to unravel the causes and mysteries of disease.—*The Monthly Homœopathic Review*, February, 1904.

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AND

—|| **RELIABILITY OF ALL THEIR DRUGS**

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COMMON DISEASES AND THEIR TREATMENT.

II.

(Continued from last number, p. 104.)

I ABSCESS COMPREHENDING INFLAMMATION,
SUPPURATION AND ULCERATION

Allium sativum can remove sprain of ankle or toes. It has another peculiar action on the tendons of psoas and iliacus muscles mostly due to injuries, as lifting of heavy weights. In this country such cases are often observed in females on lifting large water-pots (बजरी) full of water.

Ammonium mur. is a remedy for sprain. Of it Allen writes: "This drug has been used in the treatment of chronic sprains. It is one of the remedies when there is contraction of the hamstring tendons, which seem tight when walking, better from continued motion." Like *Allium cepa* it has cured neuralgic pains in stumps of amputated limbs. Ulcerative pain of heel from over exertion in walking is met with in this medicine. The pain is relieved by rubbing. Pain in the small of the back as if beaten and shattered, also painful stiffness in loins which forces one to stoop in walking will help in the administration of the medicine, when those pains are due to injury or rheumatism.

Ammonium picricum records the cure of a peculiar sensation which occurred after a fall on the back of the head, by Clarke. "Another case was that of a doctor who had been thrown from his carriage and injured about the back of his head. He seemed more frightened than hurt, but in a few days he noticed that on turning in bed, or stooping, or in any sudden motion, he would be seized with a 'wild feeling' in the occiput, trembling beating of heart with intermission, and great alarm. *Am. pic* completely relieved him after other medicines had been given in vain."

Anacardium orientale is a medicine of the diseases of spine, including the results of concussion, compression or other changes. According to Allen, "Diseases of the spinal cord, sensation of a band around the body, feeling of a plug in the spine so that any motion of the body causes a pain as if a plug were sticking still further in to the body, paralyzed feeling in knees, the patient is scarcely able to walk, feeling as if the knees were bandaged" It has also been found useful in injuries of tendons.

Apis is a powerful antidote to the stings of bee, hornet or of other insects. Hempel and Arndt writes

"It has always been known that the sting of the bee is not only painful, but absolutely dangerous to many persons. No attempt was made to utilize this knowledge until homœopathy had become a recognised fact, when Brauns, a veterinary surgeon, in 1835, commenced to use the alcoholic dilution of the poison, at first to antidote the effects of the sting of the bee upon domestic animals, prescribing it, at a later date, for boils, swellings and dropsy."

I was once stung by a hornet and the intense pain was immediately relieved by an application of the mixture composed of honey and carbonate of lime (chunum).

Apis has been used in dissection wounds with success, especially when the stinging, burning pain is present. The medicine may be suggested for use as a local application.

immediately after wounds received from dissection, or post mortem examination.

Arnica is generally known as a medicine for all kinds of injuries with or without rupture of tissues. It is also administered in various kinds of inflammations. Hahnemann says :

"Notwithstanding all its carefully constructed dogmas, its scholastic definitions, and subtle distinctions, the established system of medicine has never succeeded in discovering the specific properties of this plant, or in finding any certain remedy for that general affection, (often very serious) which results from severe falls, shock, blows, contusions, etc., or from straining or tearing the solid parts of the human frame. At length, after innumerable attempts and trials, the people discovered for themselves the desired remedy in *arnica*. Two hundred years ago, a physician named Fehr, communicated to his brethren, for the first time, the discovery of this domestic remedy, since when *arnica* has been called *panacea lapsorum*. The case has been similar to all other specifics ; the art of medicine over the knowledge of them to domestic practice, has never made a single discovery for itself, because those who practice it, have not taken the trouble to try the pure effect of natural substances on persons in health."

The following case of Dr. Bayes is interesting :—

"The influence of *Arnica* on all ailments resulting from injuries is wonderful. I once converted an Allopathic friend by its effects, in this manner ; His youngest daughter, a delicate little girl seven years old, broke her thigh ; she was unable to sleep, from the continued starting of the limb, which as she was a nervous, timid child, frightened her as well as gave her great pain. All the Allopathic armamenta were powerless against this foe, and the poor child was in a pitiable case. Her father, partly by the mother's persuasions, partly by his strong love for his child, overcame his professional prejudices, and he came to me for aid. *Arnica* 15 cent. in three globule doses, cured this distressing symptom ;

the little maiden's sleep came the first night after taking the arnica. Hunting men now and then get falls that shake every bone in their bodies; the effects of these concussions though no bones are broken, are generally sufficiently painful next day to impress the recollection of their spill on them for sometime. A few doses of the 1st dec. dilution of *Arnica*, swallowed at once in a glass of sherry, or a single drop of the strong tincture of *Arnica*, in a glass of water or of sherry, or brandy and water, works wonders in these cases. Next morning, instead of being stiff and miserable, the rider who came to grief on yesterday, is ready for anything."

The action of arnica in wounds is thus stated by Hempel and Arndt :

"*Traumatic Inflammations*.—In these inflammations of muscular tissues, arnica is specifically appropriate. If you consider the specific manner in which arnica depresses the capillary vessels and the absorbent system, you have the proof of its homœopathicity to bruises, contusions, wounds and sanguineous extravasations. Arnica relaxes the contractility of the capillary vessels, hence it favors effusion from the capillaries into the surrounding cellular tissue; at the same time the action of the absorbents is checked by arnica; hence the effused blood forms a more or less permanent extravasation; and hence the homœopathicity of arnica to the consequences of external injuries. Contusions and lacerations of the muscular fibre seem to constitute the chief sphere for the therapeutic action of arnica in traumatic diseases."

Allen rather prefers its use in lacerated wounds and cuts than in contused wounds and bruises. He says :

"Extremely valuable when the body feels bruised and sore, results of injuries (rather of cuts than bruises)."

Marke gives an example, which is, "I once ran a piece of wire into the tip of one of my fingers, causing paralyzing pain. I applied Arn. Ider at once, and the pain was better instantly—seeming to be wiped out from the point of injury in the arm."

I have used arnica in several cases of contused wounds and sprains even without a sign of abrasion. The diffused inflammation was greatly swollen. The internal and external use of arnica always produced the desired effect in a short time.

The pathogenetic action of arnica has led to its use in other inflammations besides traumatism with good result. It is not necessary to limit its usefulness in a narrow sphere.

Belladonna is a great non-traumatic, anti-inflammatory remedy, whether in diffused or circumscribed, deep-seated or superficial, inflammation of any kind of tissue. Its great analogues are Aco. and Merc. Its sphere of action is where redness, heat, swelling, tension and throbbing pain are of the first degree. Its protagonists Aconite and Mercurius divide for themselves works of the second degree. It has the following symptoms:

Bruise-like pains in the joints and bones. The pains are aggravated, chiefly at night, and in the afternoon towards three or four o'clock. The least touch, and sometimes also the slightest movement, aggravates the sufferings. Jerking in the limbs, muscular palpitations and shocks of the tendons. Renewal of the spasm by the least contact or from the glare of light. Red, hot and shining swelling of diseased parts.

The nine kinds of connective tissues are acted upon by *Belladonna*, through the vaso-motor nerves, and establish endosmotic action of the extravasated blood. Inflammation may be roughly said, to be an exosmosis of blood through the diseased or disorganised tissues, and blood itself is considered a kind of tissue. The nine kinds of tissues are:— (1) Areolar, (2) Fibrous, (3) Elastic, (4) Adipose, (5) Reticular and lymphoid, (6) Jelly-like, (7) Cartilage, (8) Bone and dentine, and (9) Blood.

The following is an explanation why blood is included within the rank of a tissue: "An apology is sometimes made for calling the blood a tissue, because one's preconceived idea of a tissue or texture is that it must be something of a

solid nature. But all the tissues contain water. Muscular tissue contains, for instance, at least, three quarters of its weight as water. Blood after all, is not much more liquid than muscle. Blood, moreover, contains cellular elements analogous to the cells of other tissues, but separated by large quantities of a fluid intercellular material called blood-plasma.

Blood is also mesoblastic, and thus the two first characteristics of a connective tissue are present. It does not fulfil the third condition by contributing to the support of the body as part of the skeleton, but it does so in another sense, and seems to support the body by conveying nutriment to all parts."

The action of Bell. is on the blood as well as the other tissues. Clinical experience supports the theory of grouping blood among the tissues. The medicines which act on the diseased tissues also act on the blood, specially in that part where the diseased tissue lies

Cases are occurring every day in which resolution of inflammation occurs by Belladonna. The specific influence of the medicine can be determined not only by its good effect in reducing heat, redness, swelling and pain but also gradually limiting the area of the disorganisation, thus relieving the outer part of the inflammatory area.

It is a curious fact that the action of Belladonna on superficial inflammation has not been well recorded, though it is a usual occurrence. The skin, composed of epidermis and dermis which is a dense fibrous tissue, naturally comes under the influence of the medicine. Boils, furuncles and other eruptions are mentioned to be healed by it. Inflammation with or without eruption is also under its scope. It may be said that Bell. has a potent influence in reabsorbing the exuded blood in any part of the body.

Bellis Perennis is a subsidiary aid to arnica and resembles with it in many respects, specially in traumatism. Overwork and exhaustion find a valuable aid in it. For this

reason it is suitable to overworked labourers, ordinary workmen, commercial travellers and railway workmen. Some of them get an exhausted state of the spine which is called Railway spine. In fact any kind of hard labour which produces a relief on lying down will be helped by the use of Bellis. As in Arnica, it has general prostration of strength. The difference is that Arnica is not used for those purposes for which Bellis is recommended. An extended trial with a view to research will indicate the line of distinction. My purpose is not to compare Arnica and Bellis. Similarity and difference will explain their respective use. One fact is clear. As a hæmorrhagic medicine, Bellis is not equal to Arnica.

Bufo has a peculiar use in inflammation of fingers caused by injury when they look black, with pains running in streaks up the arm. For the same reason, it is used in whitlow of fingers, having the same symptom. There are the recommendations of Guernsey. The black look of fingers point out to the internal hæmorrhage and their disorganised connective tissue. It is an intense inflammation with threatening gangrene. To this action, the success of Dr. Clarke in bad cases of cancer with great foetid smell is due. The medicine could not cure cancer but removed the horrible smell. In threatening gangrene it is worth an extended trial.

Cainca is said to have produced good effect in fatigue produced by much travelling, particularly on horse back. The soreness of the whole body and the exhaustion caused by excessive use of the muscular system is the outcome of congestion bordering on inflammation. That peculiar state requires the use of medicines which are often useful in these days of hard and active labour.

Calcarea carb. has the following symptoms with regard to the lumbar and sacral regions: Pain so great he could scarcely rise from a seat. Pain as from straining; in spine on stretching. Pain in the small of the back as if sprained; he can scarcely rise from his seat, after being seated. Pain in the lumbar region, when riding in a carriage.

These symptoms have led to its use in pains of the lumbar and sacral regions, as the result of injury or rheumatism, with success. Several cases have been cured or greatly relieved from its use.

Cocculus has cured inflammation and suppuration at the root of the toe-nails with burning as from hot iron. It also produces cramps and convulsions of a group of muscles or of limb either in rest or on movement, induced by wounds and ulcers which are painfully sensitive to touch. This extreme irritability is due to the affection of nerves and muscles which are infected by the wound or sore. The great sensitiveness to touch is a keynote of *Cocculus* to be used on any occasion after injury or during inflammation and suppuration.

Coffea is a medicine for general irritability, or when particular parts are affected by painful inflammation. The pains are intense as to produce agony and make the sufferer walk about to relieve the distressing pains, if he were able to do so. The inflammation may not be commensurate with the intolerable suffering.

Comocladia has the effect of reducing a particular kind of inflammation of leg and foot giving rise to high fever, the swelling increases but the pain subsides. The skin becomes gradually discoloured with a tendency to separate the epidermis which forms into thin scales. This generally leads to fissures which discharge sanious fluid. The formation of pus is almost absent. In a case, the burning pain was so great that with difficulty it could be relieved. Lily leaves, covering the whole leg, gave great comfort. The fissures did not at first form to give out the sanious or serous fluid. The doughy sensation gave impression that a large quantity of pus was collected. The insertion of exploring needles manifested the mistake, showing the pathological condition. At last the sanious fluid came out through the small points, made by the needles and they enlarged to fissures. *Comocladia* brought on the cure.

Crotalus is generally believed to be a remedy for inflammation due to poison. The septic nature of a swelling wants the help of this medicine. Other kinds of inflammation of a severe type also require the aid of this serpent poison. In the case of Machado cited by Dr. Hayward in his famous book on *Crotalus*, the wounded hand and arm were inflamed and became very painful, the man died within twelve hours after the bite. The nature of the inflammation becomes manifest in the case of the frog experimented by Dr. Mitchell. The following symptoms were noticed :

"Struck in thigh. From the wounds a bloody serum continually oozed all that day and all the next day—some drachms. On the third day the frog was very sluggish. The bitten leg was enormously swollen to the very end of the toes, which, on being held up to the light, were seen to be distended with red serum. The skin of this limb was also soaked, in places, with extravasated blood. It died during the third night."

The large quantity of extravasated blood is one of its characteristics. Tension, swelling, heat and pain are mostly observed in the bitten part. It may be said that the extravasation of serous fluid is more severe than that produced by *Comocladia*. The extravasation may not be due to erysipelas. The severe nature of any internal injury without the loss of continuity of the outward tissues may produce the terrible extravasation. In those cases the use of *Crotalus* is serviceable.

Dr. Hayward has given the following interesting cure of a chronic itching spot resulted from the bite of an insect :

"MRS. S,—aged 57. Whilst treating this lady for chronic hæmorrhoids in June, 1871 on feeling her pulse she withdrew her hand to rub a red, itching spot on the back of her left third finger. She said it originally resulted from the bite of some insect brought by her monthly nurse twenty years ago, and returned regularly at the same time every year ever since, each time it lasted about a week ; and though many things had been tried, nothing had much relieved the burning itching or prevented its return. It had this time been present three

days. Having in my case a little tincture of *crotalus* 3, I dropped a little on it and rubbed it well. The next time I saw the lady, she said the spot had soon ceased to itch, and had disappeared within two days, that is, had lasted only five days this time. I have continued to attend this lady for different ailments ever since, and I know as a fact that the spot never again returned."

In the case of Lingen, one of Dr. Hering's provers, stinging itching, flying to all parts of the body, worst on the shoulder blades were observed. In Dr. Hayward's proving, after rubbing in a little venom into the scratch on the wrist, the itching tubercles appeared. I repeat his own words: "About fourteenth day noticed several small, hard, itching tubercles, each the size of a pea, had appeared *in* the skin of calves and legs, more numerous in left one; they continued to increase in number for over two weeks, and then to gradually disappear, by scaling and being scratched. During the second and third weeks my singlets were stained, reddish-orange under arms, as if by the perspiration from the axillae."

Another kind of inflammation of jet black spot is peculiar to *Crotalus*. It happened with Mr. R,—who was bitten on July 10th by a small black rattlesnake on the second joint of the left ring finger. The spot is thus described: "July 14th.—He complained of a feeling of soreness in the flesh of the right hip, and on examination a jet black spot, some two inches in diameter, was discovered, having an elevation or thickening of the skin to the extent of about a line, and having well defined edges. During the next four days this discoloration extended up to the level of the umbilicus, completely round the body and down to the extremities. During convalescence it disappeared gradually from above downwards, leaving the toes last."

In the case of Schœpf recorded by Hering the following symptoms recurred every year after a bite: "Annually at the same times of the year, pain, swelling, and fever, with blue and yellow spots on body."

(To be continued.)

PROLONGATION OF LIFE.

The art of prolonging life has engaged the attention of man from his very creation, and much has been written on the subject from the remotest antiquity; and yet the question remains very far from being solved, and all new comers, provided they approach it with all the modern appliances, cannot but reap a rich harvest, and render invaluable service to our species. Every one, except hardened misanthropes, looks upon human life as a blessing, and had not efforts been made to preserve and prolong it, "the human race would in a relatively short period of time become extinct." These considerations lead us to take a detailed notice of the very interesting lecture on the "Means for the Prolongation of Life" recently delivered by Sir Hermann Weber before the Royal College of Physicians of London. Sir Hermann has advanced very little that would appear new to the profession, but they are very valuable to the lay people, especially of this country where the rules for the preservation of health are "more honoured in the breach than the observance."

Our lecturer does not touch upon such questions as infant mortality, the sanitation of towns and houses, the physical education of the people, the medical control of educational institutions and the various forms of pathogenic microbes; nor does he enter into the pathological anatomy, the clinical symptoms or the treatment of diseases—subjects which are being studied by some of the most eminent medical men of this age in a scientific spirit. He confines himself principally to the prolongation of the life of adults by the arrangement of their manner of living, and treats it from a purely empirical aspect. "Death from old age is caused by a kind of atrophy of the hematogenic glands and of the tissues and organs connected with the changes in the blood vessels." Our lecturer points out such means as are available to protect ourselves from these changes. He deals largely with the results of his own experiences and observations, and his views, and his counsels which are detailed and precise, are valuable inasmuch as he has been occupied with the

subject for half a century, and has gained a certain measure of success in his own case as well as in those of others.

The chief elements in longevity are a good constitution and a long-lived family. The principal factor of inherited longevity is a good circulatory system, which cannot however be separated from the respiratory system nor from the vasomotor part of the nervous system ; but to preserve this advantage recourse must be had to physical education, moderation, suitable occupation, and well-selected marriages. Early deaths from hereditary causes, and such diseases as tuberculosis, weakness of the fibres of the heart and of the coats of the arteries and capillaries, tendencies to atheromatous and allied changes, to stone in the urinary organs and to senile bronchitis and pneumonia, may be greatly warded off by much air in and out of doors, by respiratory and other exercises tending to strengthen the heart and lungs, and by great moderation in food and drink.

Under the head of exercise Sir Hermann gives detailed instructions in reference to walking (including under it what he calls the week-end holiday, and the summer holiday, exercises), respiratory exercises and tension exercises.

Walking, says he, accelerates the action of the heart and the breathing, and causes more blood to pass into the blood vessels, which are forced to contract more frequently, and which carry it with greater energy to the different organs and tissues, nourish the latter, and become themselves nourished. By it, the number and depth of inspirations are increased, more oxygen is taken up and more carbonic acid is given out. By it, the circulation of the blood and lymph in the abdominal cavity is accelerated, as well through the direct pumping action of the heart, as also by increased contractions of the diaphragm and abdominal walls, and this improved state of the circulation, is shared in by all the organs of the abdominal cavity. Walking also accelerates the action of the muscles of the legs, by which more blood is attracted to them, and all afferent vessels of the lower extremities carry away more blood from the heart, and the efferent vessels, the veins and lymphatics, carry more blood back to the

heart, and force it to contract more energetically. The act of walking also causes through increased action of the heart, an increased afflux of blood to all the organs of the body, and thus improves the state of the organs and their blood vessels. Finally, walking promotes the nourishment of the muscles themselves.

According to our lecturer, the regular walking exercise of a healthy adult must be uninterrupted as far as possible in all kinds of weather. This will accustom him to every state of the weather, and increase his power of resistance to chills and other morbid influences. The amount of walking may vary, according to circumstances from half an hour to two or three hours a day, part being taken in the morning and part in the afternoon. Graduated up-hill exercise is as a rule more beneficial than walking down-hill or on level ground, especially in cases of weakness of the muscular fibre of the heart and moderate degrees of dilatation.

In addition to the daily walk it is desirable to take, say once a week, a more prolonged exercise in the country up to four and six hours. During such a walk, a very small quantity of food and fluid (say a few biscuits and an apple or an orange) should be taken. By so doing the body will lose in weight it is true, but the loss will consist almost entirely of water through the skin, the lungs and the kidneys, and some salts and other excretory substances. By the simultaneous removal of extra fluid and diminution of supply, more used up material will be removed, and the somewhat starved tissues will be enabled to take up more new material. The weight thus lost will be regained in a few days.

Our lecturer thinks that an annual or biennial walking or climbing tour of three or four weeks or longer in mountainous districts, especially on glaciers, with three to six, and occasionally even eight hours walking or climbing on most days of the week, will cause benefit to every organ of the body more or less from the brain to the skin and hair, and increase the power for mental work. He adds "I have observed that the hair of the head and beard, when commencing to turn grey, has resumed after good courses of climbing more or less of the original colour;" and that "while before the climbing tour a slight exertion in

walking rather quickly caused the pulse to rise from 60 or 65 to 110 and 130, after the climbing tour the same or even much greater exertion produced only a rise to 80 or 85."

The marked improvement in the heart's nutrition and action produced by the act of climbing, especially steady and prolonged climbing, is caused by the deep inspirations which it necessitates. So our lecturer goes on to treat of respiratory exercises. As these exercises proved very beneficial to himself and his numerous patients, he has laid down practical directions to be observed when carrying them out. We give them below in the hope that they may be found useful to many of our readers:—

Commence with moderately deep inspiration and expiration to be continued during 3 to 5 minutes once or twice a day, and gradually increase the exercises to 10 or 15 minutes. The depth of each inspiration and expiration, to be also gradually increased. At the beginning a sixth, or a quarter, or half a minute for every inspiration and every expiration ought to be sufficient. If well borne, each inspiration and each expiration may in the majority of cases be brought up to a minute. All the movements are to be made slowly. As a general rule, inspiration may be made in the erect position with raised arms and closed mouth. During expiration the body to be bent down so that the fingers touch the ground or the toes. If the erect position be found to be inconvenient, the horizontal and sitting positions may be resorted to. By degrees, one can learn to make several up and down movements during every inspiration, and bend and raise the body several times during the expiration. This alternate bending and raising of the body may produce the additional advantage of strengthening the lumbar muscles, and so of combating the tendency to lumbago. Another useful combination with the respiratory exercises is the turning of the body round the axis of the spinal column, alternately with deep inspiration from left to right, and with expiration from right to left, with half raised arms. This kind of movement, if commenced early enough and practised regularly and thoroughly, may bring into action some of the muscles of the spine, and may to some degree correct the stiffness of the neck and of the spine and the tendency to stoop, so common in old age. The swinging of the arms round the shoulder-joint is likewise a useful combination. A habit of taking deep inspirations and expirations several times during the day, especially when walking, is very beneficial. But the most convenient time for practising them is in the morning before or after the bath when the body is loosely covered.

The above are directions of a general nature, which must be varied according to the circumstances and constitutional peculiarities of individuals. These respiratory exercises have a beneficial influence on the circulation, they tend also to promote the nutrition and efficiency of the lungs themselves, which in old age are liable to be atrophied. Their action extends also to the blood vessels and organs contained

in the abdominal cavity, and to the serous membranes of the pleura, the pericardium and the peritoneum. In fact, they constitute a kind of massage to the lungs, the thoracic walls, pericardium and heart (Sir Lauder Brunton), and are invaluable to men of sedentary habits who are not able to take any one of the ordinary modes of exercise. The judicious use of these exercises is justly regarded as one of the preventives of diseases of the lungs, and can also, under medical directions, be rendered useful in some apyretic forms of chronic tuberculosis, and in the later stages of convalescence from acute disease. But they are not good to persons of very delicate health, and are positively injurious in great dilatation of the heart with or without valvular disease, and are not suitable in active tuberculosis and in tendency to pulmonary hæmorrhage, nor in the early stage of convalescence from severe acute diseases.

The last form of exercise we shall advert to here is what Dr. George Oliver calls—

The static or tension exercises, which consist in the static contraction of all the muscles of the body while standing from one to two minutes several times a day. In goutiness the arterial pressure is increased and the tissue fluid is prevented from returning to the blood, and lodges in the tissue vacuoles. Tension of the muscles diminishes this arterial pressure and allows the tissue fluid to return. Dr. Oliver finds that one minute's tension clears up as much as 20 per cent. of lymph. These tension exercises may be practised best an hour before all meals, when nature itself produces a normal fall in the arterial pressure; but other times may be substituted if more convenient.

Sir Hermann takes little notice of riding on horseback, and the various kinds of sports and gymnastics. He thinks them, however, to be most useful to a very large number of persons. On this subject, the advice of Lord Bacon, old though it be, might be followed with advantage—"Bowling is good for the stone and reins, shooting for the lungs and breast, gentle walking for the stomach, and riding for the head." The last advice is especially valuable to students and literary men, as recent experiments by medical experts tend to show that during the act of thinking the head becomes heavier.

(To be continued.)

EDITOR'S NOTES.

A Secale Case.

THE following account of a case of typhoid by Dr. Wm. P. Wesselhoeft, the well-known Homœopathic physician of Boston, reproduced in the April number of the *Homœopathic World* from the *Medical Advance* of February 1903, affords an admirable illustration of the way in which homœopathic medicines should be selected. The patient in question was in the middle of the third week of his illness, which took on the gravest symptoms in the beginning of the second week "The collapse was plainly visible in his face, sunken eyes, livid skin, profuse cold perspiration, spasms and rigours, no response, strabismus with injected sclerotic, irregular respiration, pulse uncountable, inability to swallow, every now and then a faint shiver with the spasms" In fact the patient was in a moribund state. Not knowing what to do, the attending physician went to his patient with a large collection of Repertories and *Materia Medica*, and continued observing him. He now found the following *characteristic* symptoms "Spasms always commence in the face first, then spread all over the body, and end in the fingers which are stretched out and spread wide asunder." After a diligent search he found this group of symptoms under *Secale*

- " 1. Spasms commence in face and spread over the body.
2. Fingers spread apart in spasm
3. Profuse, cold, clammy sweat, pale, sunken hippocratic eyes"

So *Secale* was prescribed. Four or five days after, the patient was found "lying quietly, perfectly relaxed in bed, while the nurse was giving him milk by tea-spoonfuls", and thus was he saved from the jaws of death.

Poisoning from Atropine Eye Drops

In the *British Medical Journal* of Jan. 23, 1904 Dr. C. H. Wise reports a case of Atropine poisoning by the use of eye drops. The patient was a boy 7 years old and 12 minims of a solution containing 1 gr. of atropine sulphate in 2 drachms of water had been used, equivalent to 1/10 gr. of atropine, and this was spread over a period of two days. The symptoms began to show themselves after the fifth instillation and after the sixth assumed an alarming character.

The child had been well until the afternoon of the 14th October 1903, when he complained of giddiness and dryness of the throat, and seemed strange in his talk. In the evening he was

unable to swallow except with difficulty and was very unsteady on his feet. He began to talk of seeing things such as strawberries growing on the bed, strange men in the room, birds about the ceiling and railway signal posts in the corner. He had occasional severe convulsive jerkings of his arms and legs. About 9 p. m. when Dr. Wise saw him he was in bed talking rapidly and incessantly; frequently smiling to himself and now and then laughing outright. He was continually tossing about in the bed occasionally sitting up and looking round the room as if frightened at something he saw. His face was flushed and his eyes were unusually bright, every now and then he picked at the bed clothes with his hands as if gathering something. He seemed to know the Doctor and answered his questions, explaining that he was gathering strawberries which were growing on the bed clothes. His temp. was 100.2 and his pulse 96. There was no rash or sore throat. His pupils were moderately dilated, insensible to light. The symptoms became somewhat worse at night and persisted with but little alteration the next day. There was no sleep but the convulsions did not increase. During Oct. 16th the symptoms gradually subsided and on the 27th the patient was substantially well, although the pupils were still perhaps even more fully dilated.

The Snake Stone.

An account of this mysterious remedy is given in the *British Medical Journal* of 20th February 1904. The snake stone or as it is called in India "Bish pathar" is said to have the wonderful property of absorbing the snake venom when applied over the part bitten by a snake. In India these stones are highly prized and devoutly believed in. Many years ago Sir J. E. Tennent acquired one and submitted it to Faraday for an analysis who found it to be a fragment of calcined bone which after calcining had been filled with blood and again charred. One of these snake stones had been recently submitted to the Government bacteriologists of the laboratory in Pieter-Maritzburg, Natal, for testing its alleged properties with South African snakes, by a gentleman who had obtained it in India. This gentleman confesses his firm belief in its miraculous powers and says that he had been an eye witness to its efficacy.

The snake stone in question was a small object of trapezoid form measuring $22 \times 15 \times 5$ m.m. and had the shape and curvature of a fragment of an adult femur. The upper surface was regular and slightly convex, the lower somewhat irregular and slightly concave. The colour was jet black and all the surfaces were highly polished. It was brittle and showed a smooth surface, the interior was of a uniform dull black colour. A small fragment effervesced with mineral acid.

The efficacy of the stone was tested in the following way :— A rabbit weighing 1,838 grams was injected subcutaneously with 0.00066 of gram of the venom of the black mamba dissolved in two or three drops of water. Given subcutaneously this quantity would not be quite sufficient, as a rule, to prove fatal. Previous to the injection the surface for a few inches round had been shaved. After withdrawing the needle which had been inserted at right angles and to a depth just sufficient to traverse the integument, the skin was moistened and the snake stone applied over the puncture. The stone became fixed to the skin and remained adherent for two hours and forty five minutes when it fell off during a movement of the animal. Death occurred three hours and forty-nine minutes after the injection, the symptoms of black mamba bite having been developed without any modification. A control animal weighing 1,913 grams was similarly shaved and injected with 0.00068 of a gram of the same venom, i.e., with a proportionately equivalent dose. No snake stone or other reputed charm was applied. The usual symptoms were developed, but in two hours they had passed off and the animal recovered. A rabbit weighing 1,191 grams was subjected to a similar process. The snake stone was applied and it firmly adhered to the puncture, and the stone was found to be firmly fitted in its original position even after the death of the animal which occurred forty hours after the injection. The symptoms and the post mortem appearances were those of a puff adder bite. The control animal in this last experiment completely recovered without developing any very severe symptoms in six hours time. Upon both these occasions the snake stone was placed in a small quantity of milk, but no visible changes occurred in the milk. The slight power of absorbing fluids possessed by the snake stone is the only useful quality inherent in these objects.

Infant Feeding.

In the *British Medical Journal* of 20th February appears an account of the result and mode of feeding the infants brought up under the supervision of Professor Budin's *consultation de Nourissons* at the Clinique Tarnier, in Paris. This account is based on the Professor's report presented at the meeting of the Académie de Médecine. Professor Budin, is considered to be a very high authority on the question of infant feeding.

Each mother is expected to bring her baby every Friday morning to have it weighed and examined. The results are entered in a register and noted on a chart, so that the infant's progress can be followed.

Professor Budin lays great stress upon the importance of women suckling their infants; but in case of insufficiency the mother's milk is supplemented by a varying quantity of sterilized milk which the mother fetches or sends for at the hospital every day. This is

called mixed feeding. If the woman is absolutely unable to nurse her child sterilized milk alone is prescribed. This is termed artificial feeding. Since March 1898, 712 children have attended the consultations of the Clinique Tarnier for two years or less the shortest period being one month. The average attendance was nine months. The statistics show that about 95 per cent of the infants were suckled or received mixed feeding, or began by being suckled and went on to cow's milk. In fact only 5 per cent of the infants have been fed artificially. Professor Budin and his colabourer, M. Planchon remark that if overfeeding is more dangerous in artificial feeding, it causes, nevertheless serious consequences in breast feeding. It is less dangerous to underfeed than to overfeed for although the child's growth may be checked, digestive troubles are avoided and when the quantity, later on, is augmented it will rapidly pick up lost weight. They point out that in judging the effect of mixed feeding the scales are the best guide. If an infant has not gained sufficient weight or has not gained at all, supposing at the same time that its digestion is good and its bowels are in order, if the child wakes up often at night and if, after weighing it before and after each meal it seems to have taken too little milk because the breasts contain little, then it is extremely probable that it is insufficiently nourished. In supplementing the mother's milk care should be taken that the milk should be neither skimmed nor watered.

It is very important, also, to watch children during the second year of life, when the teeth are being out, and when weaning takes place. Weaning should take place as late as possible, the child receiving in addition to its mother milk food made with flour.

The same principle applies to artificial feeding, which should be progressive ; at the end of the first year a little flour, about 5 grams (one or two teaspoonfuls) is added, that is to say a teaspoonful to every 25 grams of milk. In 55 observations the quantities of milk taken corresponded to about a tenth part of the body weight. So long as children are under the supervision of the hospital, i.e., up to the age of 2 years, they are only given milk. Meat soup is not nourishing ; 1,000 grams of it are only equivalent to 100 grams of milk. It has also the disadvantage of making babies take a dislike to milk. Eggs are not given nor recommended, as in town they are often stale. The average weight of the infants under the supervision of Clinique Tarnier is at 2 years 11,500 grams. Digestive troubles and gastro-enterites have almost totally disappeared ; even during the heats of summer not one child dies of diarrhoea. Troubles due to overfeeding, such as distended abdomen, dyspepsia, obesity, rickets, eczema are not seen, and down to the present not one case of scurvy has been observed.

Sleeping Sickness.

It is now definitely settled that sleeping sickness of Africa is caused by a kind of fly, *glossina morsitans*. The scientific American supplement of February 27 describes thus the result of a medical mission:—

Although the sleeping sickness is sufficiently well known as regards its most general characteristics and habitat, the same is not the case with respect to its mode of propagation, as to which several theories have been propounded. At all events, the following are the results of a mission recently sent to Africa by the Minister of Public Instruction and the Colonial Institute of Medicine. Dr. Brumpt, the head of such mission and preparator for Prof. R. Blanchard, had collected a large number of facts upon the question during the course of a preceding mission directed by Viscount du Bourg de Bozas, who has traversed Africa from Djibouti to the Congo. It results from all the observations made that the sole agent of transmission that can really be criminated is the "tsetse" fly, the *Glossina morsitans*, which is very common from the Nile to the mouth of the Congo. In the Antilles, to which it has been carried, it has never been possible for the disease to become acclimatized, since the tsetse does not exist there. In Africa on the contrary, the insect swarms along the rivers, and the boatmen and travellers are continually exposed to its sting. Of a fickle and instable character, it stings ten persons before sucking the blood of a single one—an excellent condition for the transmission of the trypanosoma from one to another. Dr. Brumpt has discovered the method of evolution of its larvæ, which are viviparous and are deposited in a humid medium, such as earth and dung, upon which, however, they do not feed. The perfect insect appears six weeks later. In all the persons attacked it has been found that they had made a more or less prolonged stay at the waterside, in order to engage in fishing, and where they became infected with the trypanosoma. The period of incubation of the disease is variable, and may reach five years. In certain regions, the patients are treated by removing from them certain ganglions that have become hypertrophied, but the value of such treatment has not been experimentally verified. In most cases the victim continues his manner of life up to the moment at which he no longer awakens from his somnolence, but slowly passes away in the bosom of his family.—*Scientific American Supplement*, Feb. 27, 1904.

The X and Radium Rays in Cancer.

The cure or mitigation of violent symptoms of Cancer and Sarcoma, has become a very desirable object for the progress of the two diseases. The following is from the Scientific American, 13th February, 1904:—

The *Annus Medicus* of the *Lancet* refers especially to the therapeutics of cancer, quoting from a paper published in the first volume of the "Archives of the Middlesex Hospital," by C. R. C. Lyster, the medical officer in charge of the electrical department of that institution. In writing of the effect which the X-rays have upon cancerous growths, the author says "that a very large number of cases have been relieved of pain, and that in a certain number the growth has undergone a definite retrogression; of all the new growths the rodent ulcers have been by far the most satisfactory to treat. The cases that have been under treatment have varied from those exhibiting small recent spots to the most extensive and old-standing lesions. They have all shown a great tendency to improve; the more recent ulcer have quickly healed, leaving a healthy scar, and there had been no recurrence up to the time of publishing the report. In cases of rodent ulcer of long standing, and with considerable loss of tissue the tendency to heal has been remarkable, but after a time, recurrence is not unusual, and this seems to be more difficult to deal with than is the original ulcer. Of other growths, experiments so far seem to show that the best results are obtained in cases of mammary carcinoma, especially in the recurrent forms. Sarcomata are not so amenable to treatment as are carcinomata. The cases which are apparently the least benefited are the epitheliomata, and this is more especially the case after secondary infection of the lymphatic glands has occurred. With regard to the use of high-frequency currents in malignant disease, it is believed that the good results claimed for this therapeutic measure are due more to the tonic action of the rays than to any direct action on the growth itself. Cases of rodent ulcer and epithelioma were submitted to the action of radium and also to pitchblende, the application of the latter substance being of particular interest, as it is far more easy to obtain than radium; the results of the treatment have not yet been published."

The *Lancet*, in reference to radium in the treatment of cancer, says: "Full of theoretical interest as the discovery of radium is, its remarkable property of radio-activity has already met with practical application in the treatment of disease, but its real value in this regard, as in the treatment of cancer and lupus, cannot yet be determined. The radio emanations are undoubtedly powerful to produce chemical change, but it remains to be seen whether they will be effective in checking the advance of a morbid process, or of destroying, or of restoring to a healthy state, diseased tissue."

The Vienna correspondent of the *British Medical Journal* states that Exner and Hozknecht have used radium in the treatment of carcinoma and sarcoma with satisfactory results. The conclusions reached by these investigators are as follows: "Radium rays irritate the cells of the skin less vehemently than cells of cancer and sarcoma. The last named are brought to necrosis before the other tissues suffer severely from the effects. The radium dermatitis is very similar to the Röntgen rays dermatitis." The experience then of the majority of medical men who have used X-rays in the treat-

ment of cancer is that in some forms of the disease they have proved decidedly beneficial. As to radium, its use has been too limited and the period in which treatment has been effected by its means has been too short to warrant the passing of a definite opinion with regard to its efficacy as a therapeutic agent in cancerous growths.—*Scientific American*, Feb. 13, 1904.

Crusade against Rats.

The *Scientific American* of January 23, supplies the discovery of a new bacillus of rats, which affects them, excluding all other animals. The Pasteur Institute of Paris in order to minimise the human danger of spreading plague has inaugurated the method. It seems that the Humanitarian Society makes its doubtful progress in England, and not in other Countries of Europe. The following is the notice of the discovery:—

The great precautions which were taking not long ago at Marseilles in order to prevent cases of pest being introduced into that port has brought up the question of contagion by rats, seeing that the rats which are carried on the vessels from the eastern countries are the principal agents in the propagation of the pest. The French government is looking for a good method of exterminating the rats so as to decrease the danger of such epidemics. Dr. Danysz, of the Pasteur Institute, has lately been studying the question of the destruction of parasites and claims to have discovered a novel method for destroying rats which will be quite successful. Different methods have been tried before this, among others the Clayton apparatus invented in England, which destroys the rats by asphyxiating them with carbonic acid gas. But Dr. Danysz has found a means of getting rid of the rats without the risk of killing any other animals, and thus the method may be applied especially in the country on farms and in different establishments where the other animals are to be free from harm. In the course of his researches, Dr. Danysz found that the rats can contract a special disease to which other animals are not exposed. He succeeded in obtaining the bacillus of the disease and at present it becomes quite easy to destroy these animals. It is necessary only to soak bread or grain in a bouillon of the microbe culture and allow the rats to eat it, when they contract the malady and usually die within the space of five to twelve days. A number of experiments have already been made with the new method, especially in the sewers of Paris, which are full of rats, and very good results have been obtained. It was proved during the experiments that the young rats are the most sensitive to the action of the microbe. At present the new rat-exterminating culture is coming into practical use at Paris and especially at the Bourse de Commerce where it is used to protect the deposits of grain. Dr. Chantemesse, who is now at

Marseilles, has sent ^{to} Paris for a large quantity of the culture and he intends to use it for destroying the rats on shipboard.—*Scientific American*, January 23, 1904.

Recent Work on the "N" Rays.

WHATEVER incredulity may be expressed in England in regard to the so-called "n" rays French *savants*, notably M. Blondlot who first described these emanations and M. Augustin Charpentier, are still freely contributing papers on the subject to the Académie des Sciences. The most recent development is the discovery by M. Blondlot of certain new rays allied to the "n" rays and, like them, emitted by the Nernst lamp. For these the name " n_1 " rays is suggested and they exhibit the peculiarity that whereas the "n" rays increase the brightness of a suitable feebly luminous surface the " n_1 " rays diminish it. M. Charpentier's investigations have been chiefly directed to the physiological action of rays of both kinds. Having found, as mentioned at p. 594 of THE LANCET of Feb. 27th, that the acuity of vision is augmented by the action of the "n" rays he has tried their effect upon the senses of smell, taste, and hearing. The organs of all these senses have their activity stimulated by the rays when these are brought to bear upon the nasal mucous membrane, the tongue, or the ear respectively, and in addition to this the sense of smell can be affected by bringing a source of the rays opposite a point immediately above the glabella or, better, by placing it upon the top of the head a little in front of the bregma. Whether as in the cases of sight and smell the effect of greater intensity of taste and hearing can be produced by the action of the emanations upon the brain through the skull is yet undecided, but the difficulty is probably only that of localising the appropriate centres. On repeating his experiments with the still newer " n_1 " rays M. Charpentier found that, as in the case of the luminous screen, results opposite to those already stated were obtained, there being a general decrease in sensitiveness of the organs concerned.—*Lancet*, March 26, 1904. .

The Late Sir Edwin Arnold.

Sir Edwin Arnold, Oriental scholar, philosopher, poet, and journalist, has, in his seventy-second year, passed to "where the Silence lies." His considerable merits as a poet will certainly preserve his name in all records of English literature. It may be that the "Light of Asia" gained a popularity by the novelty of its setting rather than by the originality or subtlety of its thinking, but none the less it was the work of a man of genius. But apart from his merits as a man of letters and an untiring worker in the various fields of literature his memory will be cherished

by many members of the medical profession whom he numbered among his personal friends. For Sir Edwin Arnold was an admirer of medicine and always found time to follow, as far as a layman might, the advance of medical science. In 1895 he delivered the introductory address and presented the prizes at the opening of the winter session at St. Thomas's Hospital Medical School. That address bore evidence of the keen interest which he took in medical progress. In it he spoke with praise and conviction of the work which had been done and of the benefits which were likely to accrue from the pathological researches of the day, while the important role which proper nursing plays in the treatment of disease was fully recognised. It is an interesting fact that during the Crimean war Sir Edwin Arnold wrote some verses to the founder of modern nursing—Florence Nightingale. These verses were incorporated in the address and then made public, we believe, for the first time. His attitude towards experimental physiology was instructive. While holding strongly to the ethics of the religion of Buddha, with its beautiful tenderness for all living creatures, yet he said in one of his speeches: "If to give my own life under torture would certainly lead to the saving of very many other lives I should hate and scorn myself if I had not the will so to die; and as between men and beasts I suppose it is true that we are 'more than many sparrows.'" Sir Edwin Arnold was a versatile and brilliant *littérateur* and a man of wide knowledge and many sympathies. Such men are ever the friends of medicine. One of Sir Edwin Arnold's sons is a member of the medical profession and is Government medical officer to the sanitary authority and port health officer at Levuka, Fiji.—*Lancet*, April 2, 1904.

Love A Disease.

THE bright idea, now for the first time engrossing the quidnuncs of the halfpenny press, that "Love is a Disease" has the sanction of venerable antiquity. Apart from the Greek and Roman classics it is a commonplace of the seventeenth century writers on medicine, such as the learned German Gregorius Horstius who in a long academic dissertation on the nature of love showed it to be a mental disorder, while one of his opponents spoke of it as a result of poisoning by philtres, and yet another, Christopher Bilitzer, averred that the best physicians could diagnose the disease from the action of the pulse and reminded his audience—for the erudite disputants were being listened to by the nobility and gentry of Giessen—that Galen himself after observing the pulse of the wife of Menippus discovered her to be in love with one Pylades and by his professional discretion was able to restore her to a better state of mind. Horstius published his thesis in 1611 and it was republished in the great folio edition of his works in 1661. The idea was then quite familiar, for in 1614 Lamandus had followed Horstius with a neatly entitled

work, "De Natura Amoris et Amantium Amentium Cura," while in 1623 Ferrand in Paris published a book on the "Malady of Love or Erotic Melancholy." The Dutch and Flemish painters of the latter half of the same century found in "love-sickness" a favourite subject. Some of the paintings of ladies suffering from this disease are accurate portrayals of the anæmic condition. Of course, none of these writers and painters had as yet suspected that there is a bacillus of love, though Cupid's arrow, which is as old as mythology, is certainly its antitype.—*Lancet*, March 19, 1904.

Senile Forms of Mental Failure.

THOUGH old age brings with it a decline in mental as in physical power and capacity the alteration is a gradual process and is on the whole unattended by serious mental disturbance. Senile dementia is that form of mental decay occurring after the fifth decade of life, in which various forms of mental disorder of a somewhat grave character manifest themselves. It is very rare before the age of 50 years in men and it is found that at least two-thirds of all patients over the age of 50 years admitted to public asylums are cases of senile dementia. In the *Journal of Nervous and Mental Disease* for February Dr. William Pickett, instructor in neuro-pathology and insanity at Jefferson Medical College, Philadelphia, publishes an article on the subject of the mental decay and disorders of old age in which an attempt is made to analyse and to classify the various forms and to furnish a practical basis for prognosis, the material studied comprising 200 cases—100 males and 100 females. Senile insanities other than dementia are rare; they comprise a delusional form and a melancholic form which are liable to occur, strictly speaking, in the pre-senile period which corresponds with the climacteric period in women (from 45 to 50 years of age) or with a slightly later period (from 50 to 55 years of age) in man. Analysis of the clinical symptoms shows that the following are the general characteristics of oncoming senile dementia: enfeeblement of attention and slowness in the association of ideas, inexact perception of relations to surroundings and to time (disorientation) marked defects of memory (amnesia) for recent events, poverty of ideas, blunting of the feelings of affection, and irritability of disposition with exacting and tyrannical tendencies. The essence of senile dementia is quantitative but irregular reduction of the mental and moral capacities and the degenerative process is usually accompanied by attacks of temporary excitement, emotional depression, and delusion, so that the superficial symptoms of mania, melancholia, and paranoia are simulated, though these affections rarely occur in old age. "Mental confusion of some degree is present in all types of senile dementia; it appears episodically in many (66 per cent. of) cases, being one cause of the familiar street wandering of such demented." The excited, depressed, and delusional types rank next in order of frequency. Physical wasting

and weakness are greatest in the common or confusional type and are progressively less marked in the other types mentioned, a point which is of prognostic value. On the other hand, the depressed and paranoid types are of less favourable prognosis as regards the mental life than are the other two types of dementia. The exaltation or ephemeral excitement of some cases is not true mania; probably, says Dr. Pickett, "true mania never arises in old age." The following table gives a summary of the symptoms and the peculiarities of conduct of the 200 patients investigated. Some of the peculiarities of conduct have a medico-legal interest as the degree of responsibility may be hard to determine.

Symptoms and peculiarities of conduct.	143 cases of the simple confusional type.	17 cases of the excited type.	14 cases of the depressed type.	26 cases of the delusional type.
	Per cent.	Per cent.	Per cent.	Per cent.
Street wandering.	40	24	14	12
Hallucinations.	23	12	64	85
Vertigo.	19	6	14	27
Headache.	8	6	0	19
Night prowling.	8	6	28	8
Suicidal attempts.	6	12	14	16
Exaltation.	8	6	7	42
Delusions of poisoning.	2	18	7	35
Delusions of conspiracy.	2	6	7	46
Other delusions of persecution.	10	24	28	38
Delusions marital infidelity.	0	6	0	12

The delusional cases are especially important from a medico-legal point of view, as these patients may become troublesome and even dangerous to their families, though when placed in asylums they soon subside into the category of "uninteresting" senile demented. The chief delusions to which they are liable are those of persecution by unseen and malign agencies, poisoning, and marital infidelity, the last of which may cause much distress and trouble to the patient's family.—*Lancet*, March 19, 1903.

Death Following Flogging.

IT IS REPORTED FROM BOMBAY.

On Monday, Mr. P. Byrne held an inquest in Bombay at the Morgue touching the death of Ramji Harilba, a Hindu, aged thirty-five. It appears from the evidence that the deceased was a bullock cart driver, and had been in jail four or five times. On the 24th of June, he was convicted of theft by Mr. Karsondas Chhabildas, and as he was an old offender, was sentenced to receive thirty

stripes in jail. He was taken to H. M.'s Common Jail at Oomer-carry, the same day, where the sentence was carried out. The flogging was inflicted in the ordinary way with a rattan in the presence of the Superintendent of the jail and the Subordinate Medical Officer. He was a strongly built man and was examined by the medical officer as to his fitness for receiving the stripes, before the sentence was carried out. After the flogging deceased was advised by the jail authorities to go to a hospital as the sores caused by flogging were bleeding. The deceased, however, did not go to a hospital, but went home directly and took no care of the sores. Blood poisoning subsequently set in and he died. Dr. Arthur Powell, Surgeon to the Coroner, who made a post-mortem examination, was of opinion that the death was due to blood poisoning, which might have been caused by the sores. The sores were of at least a week's duration and in a neglected condition. Witness thought thirty stripes with a cane would probably produce bleeding wheals. The Jury returned a verdict of death from blood poisoning, the result of neglected wounds caused by flogging legally inflicted.

Ramji Harilba brought on his death by neglecting the "wounds caused by flogging legally inflicted." He, therefore, attempted suicide, but escaped the punishment of that offence by his death. If he committed suicide, he respected law more than the English youths, who, it is said, commit that offence before flogging. Were the Coroner's Jury sure that hospital treatment would have cured the wounds caused by judicial flogging? When the flogging was judicial, would it not have been contempt of Court to try to heal them? The lashes were ordered to cause the wounds, and the jail authorities having, under judicial sentence, caused them, were, it may well be said, not justified in recommending the flogged to go to hospital. They, however, were merciful in suggesting a possible cure of their cuts. If the recommendation were unheeded, they could not possibly be held liable, for the offender endured their execution of judicial sentence without succumbing immediately. The death ensuing at least a week after, it would not be proper to attribute it to their act. Whatever the offence for which flogging was ordered, the sentence grew into capital. Plainly speaking, the death was the result of wounds caused by flogging administered in execution of a judicial sentence of whipping. The question for the public now is—whether the magistrate was wrong in ordering so many stripes, or the jail authorities right in inflicting the entire number when the offender could ill bear it, as was proved afterwards? Whatever the jail rules, the Criminal procedure Code directs:

"If, during the execution of a sentence of whipping, a medical officer certifies, or it appears to the Magistrate or officer present, that the offender is not in a fit state of health to undergo the remainder of the sentence, the whipping shall be finally stopped."

The sentence having been fully carried out, this provision did not apply or was thought to be inapplicable. But was the offender in a fit state of health to undergo the whole of the sentence? If so,

why was any anxiety shown by recommending a hospital treatment of the judicial wounds? The jail authorities would not apply to the wounds any balm. Could a hospital admit, with a police recommendation, a patient bleeding from a whipping legally inflicted? But the cases are not parallel. The jail authorities being sure that the man was in a fit state to receive the entire flogging, they could not dislodge their position by tending to the bleeding culprit.

The offender was of strong build. The Magistrate, after a trial, ordered the whipping. The offender was examined and found fit to bear the birch. The lashes were administered. They produced sores. The sores bled. There was a recommendation for hospital treatment. The advice was neglected. Weal gave way to wheals. Blood poisoning set in. Then there was death. So the whipping was too remote from death. The rattan could not have caused the death, though death followed the whipping. It was the driver's own rash and negligent omission to follow the advice for hospital treatment, that ended his life. He suffered for his own folly. Or, it might be that the jail Medical Officer having pronounced him sound for the stripes, the driver believed that the bleeding sores would not be his death, or would heal by themselves. His mistake leading to his death, might be due to the sufficiency of the jail medical examination,

One such fatal case may be no sufficient ground for a call for discontinuance of cruel flogging. But hear Sir George Campbell, the retired Lieutenant-Governor of Bengal, who, in 1876, at the meeting of the British Association, held in Glasgow, as President of the Economic Section, said :

" I think there is still immense room for scientific discussion on the subject of punishment. There are some great subjects, such as sanitation and punishments in respect of which I believe that the experts claim a certainty and a knowledge which has not yet been attained. On the contrary, I think there is still everything to be gained by enquiry and experiment, conducted without prejudice or preconceived conclusions. The mere shutting up a man without severe treatment is by no means a sufficient deterrent to all natures, and when we seek to be severe, we clash with modern notions of humanity. In one shape, indeed, there seems to be a disposition to revert to a form of torture—that is, flogging; yet after a great experience, I am myself much convinced that of all forms of punishments, flogging is the most uncertain, ineffective, and dangerous. In a light and simple form it is good for juvenile delinquents, whose offences are petty, and whom we would not contaminate by a first imprisonment, and flogging is to some natures a material addition to other punishments; but as soon as we try to carry it beyond this we are placed in this dilemma—that a flogging which is safe, is an insufficient punishment. A more severe flogging is a sort of lottery. Nineteen or 99 men it may not harm; the twentieth or hundredth it will kill.—*Reis and Rayyet*, January 16, 1904.

CLINICAL RECORD.

Indian.

A CASE OF BUBONIC PLAGUE.

BY HEM CHANDRA RAY CHAUDHURI, L.M.S.

Ram Charan's daughter, aged 10, living in Sankaritola East Lane, was seen to be attacked with bubonic plague of the right femoral variety, on the 27th March 1904. The temperature was not taken. I gave her Bell 30, cent. In the evening the temperature indicated 105.8 F. There was no delirium. Any other complication was also absent.

28th March.—Temp. at 7 A.M., 105. Administered Bell 6, dec. During evening the thermometer marked 105.6. I sent a notice to the plague office of Ward 11.

29th.—Temp., 7 A.M., 104.6 Placebo. In the evening, the fever rose to 105.6 Pyrogen 12 dec.

30th.—7 A.M., 102.6 Pyrogen 12 dec. In the evening the temp. came down to 100.6. Delirium suddenly supervened on the lowered temperature. Crotal. h. 12 dec. At about midnight the thermometer pointed to 103. The delirium was furious with frequent wild shrieks, which could be heard from a great distance. Tearing of her hairs and clothes with desire to escape from the bed were accompanied with the other symptoms. Petechial eruptions could not be seen.

31st.—In the morning she was rather quiet. Temp., 102. Stram. 6 dec. At 4 P.M., temp., 102. During the evening she was restless, temp., 104.8 Arsenic. 12 dec.

1st April.—Morning temp., 103.8. Rather quiet. Sweat on the conged parts Chin 1 dec. In the evening, temp., 105. Placebo.

2nd.—Morning temp., 100. Placebo. Evening 102.

3rd.—Morning, 99. Placebo. Evening, 100.

4th.—Morning, 99. Diarrhoea from excess of milk. Puls. 6 dec. The evening temp. was not taken.

5th.—Morning, 99. Puls. 6 dec.

6th.—Morning, 98.5 Placebo. From the 6th April the temperature did not rise. She was feeling better than before though extremely weak. The thermometer gradually indicated subnormal temperature. She could come out of the bed after a month. The right femoral bubo took a long time to be absorbed without any internal medicine, as her father was reluctant to give her any more.

Remarks.

The most noticeable feature in this case is the lowering of the temperature after *Pyrogen*, and the sudden onset of the violent delirium. The pathological interest is, whether the delirium was due to the hypermæcic or the anaemic condition of the brain? The lowering of the temperature may lead to the suggestion that there was anaemic condition of the brain. On the other hand, it should be said that such violent delirium, possibly, does not supervene on the anaemic condition of the brain. There was not only hyperaemia but congestion of the frontal lobes. The lowering most probably of the heat of the body by *Pyrogen* caused that surcharge of blood in the frontal lobes. The compensatory mechanism relieved one portion at the cost of the other.

The next point to be remarked is that Chin. 1 dec., occasioned the aggravation of temperature which was reduced by the continued administration of Placebo.

A plague officer came to visit the patient after three days from the day of sending of the notice in proper form. He expressed his opinion that it was a severe case of bubonic plague.

There was no cut or abrasion of any kind in her body. It is remarkable that the two neighbouring girls who were most frequently in the habit of playing in street with dusts were almost simultaneously attacked. The other girl was under allopathic treatment. The modern aspect of the sanitary science proves the close affinity between dust and disease.

Cleanings from Contemporary Literature.

VARIOLINUM—THE NEW VACCINATION.

A. M. LINN, M. D., DES MOINES, IOWA.

Since the generous spread of smallpox in many sections of the United States incident to our becoming a world power, the question of vaccination is once more paramount.

Jenner's great discovery is generally accepted as the adequate and only means of protection from this dreadful plague. Its use is rooted and grounded in the traditions of our professional faith, and has been esteemed the *sine qua non* in combating smallpox. This is, however, no longer a universal verdict. Vaccination has always been esteemed a necessary evil—a choice of two evils. It has not held its present place without protest. Indeed, the pathway of vaccination has been strewn with as many thorns as the fabled "course of true love." Anti-vaccination societies in England and upon the continent have made persistent and vigorous protest against compulsory vaccination. In our own country a respectable minority proclaim a determined opposition to its use, and strenuously insist that other safe and effective methods of immunization may be used.

DANGERS FROM SCARIFICATION.

Inoculation of one individual by the scab taken from the cicatrix on the arm of another is no longer tolerated. This barbarous practice is not now in vogue, and no longer are the sins of the vicious visited upon the innocent by this means. Nevertheless, inoculation by scarification is open to serious and well-grounded protest.

Infection of the wound is not an infrequent occurrence. The ugly ulcerations occur in every community. Impure vaccine is the legitimate product of the commercialism which produces it. The strife for the "almighty dollar" glosses over the production of questionable virus and obscures the paramount interest, i. e., the public safety. It will continue to be so till the products of the vaccine farm are required to pass the crucial test of government inspection.

In the *Ohio Sanitary Bulletin*, the official organ of the Ohio State Board of Health, Dr. Friedrich, the health officer of Cleveland during the smallpox epidemic, said he "stopped vaccination on coming into office because he had found evidence that impure vaccine virus had been productive of some very bad results; that he expected to resume vaccination when he found virus free from pathogenetic organisms, but that up to that time (June 28, 1902) such vaccine virus as he had examined in the Board of Health laboratory had been shown to be impure or inert." On August 11, 1902, he further writes: "Last summer I stopped vaccination, for the clinical facts showed that the virus used was not pure. The first point examined produced 2200 colonies of pathogenic germs. One-fourth c.c. of a bullion culture injected into a guinea pig killed it in twenty-four

hours. Such horrible stuff was advertised as pure vaccine virus and used on human arms."

What occurred in Cleveland occurs elsewhere, and the experience of the city on the lake is no isolated exception; other communities have learned the same sorrowful lesson. Moreover, auto-infection of wounds from soiled clothing and other sources often occurs. Friction of clothing, scratching the wound with the nails while asleep or chafing the itching arm thoughtlessly may provoke the same evil result. These cases occur in every parish in the land, and the enforcement of compulsory vaccination awakens some vigorous protests even among the most intelligent people.

VARIOLINUM.

Only the pessimist fails to acknowledge the rapid medical advancement of our day. Progress is the watchword everywhere. If in other lines, why not in methods of immunizing against smallpox? Vaccination is good—immensely better than nothing—but it is open to serious objections. Is the ultimate step in immunization yet attained?

It is to the credit of homeopathy that it offers a better method, a safe and effective means of immunizing against smallpox. Variolinum is not a new remedy, but its scope and action are not well understood and not half appreciated in our own fraternity. This is due to the fact that vaccination by scarification is "ours by right of inheritance," and for the further reason that it has fallen to the lot of few of us to treat smallpox. We have contented ourselves with scarification and overlooked a safe and more effective means of attaining the same end.

Variolinum, like vaccine, is a product of the smallpox poison. It is the clear serum of the smallpox vesicle just prior to its becoming pustular. Some pharmacists prefer the contents of the ripened pustule. It is evident from the symptoms that the same toxine which provokes the systemic storm in vaccination by scarification does so on immunization by Variolinum. The symptoms awakened aside from the local inflammation at point of scarification are identical.

Those who have had experience can testify that the remedy is a potent one. It is used in any potency from the 3x upward, and will awaken its characteristic effects with equal readiness. From three to four doses of a two-grain powder daily is the usual method of exhibition. Its effect is especially manifest in non-immunized persons in from three to ten days by the development of a majority of the following symptoms, viz., chilliness, backache, headache, fever, nausea, prostration, diarrhoea and dizziness. The writer has records of several scores of cases thus immunized by the 3x, 6x and 200 of Variolinum.

One of my patients thus accosted me: "Doctor, I am afraid to take any more of that medicine. It has made me so sick and weak I can scarcely attend to business. I had a severe headache, chills, nausea, and am now having a high fever, backache, and am much prostrated."

Our Des Moines fraternity has records of several hundred cases, which read like the following :

"The symptoms produced by inoculating Charles Wickersham, West 20th Street, on 2nd day of Sept., 1902, are as follows : Chilliness, headache, general aching (over the body), prostration. Impaired appetite, diarrhoea, marked fever and restlessness. Out of school for three days."

Signed REV. L. B. WICKERSHAM.

Address—1168, 20th St.

We issue no certificate of successful immunization unless a majority of the characteristic symptoms are provoked by the remedy. A rule was adopted by our Des Moines Society requiring that a record be kept of each case supplied with the remedy, and the patient certifies over his own signature or by his parent to the effect produced. With singular unanimity non-immunized persons after taking Variolinum a short time experienced the above symptoms.

The systemic storm provoked by Variolinum covers a period of from three to seven days ; when it subsides the patient is *immune to smallpox*.

HOW DO WE KNOW IT ?

During the past two years smallpox prevailed in many districts in Iowa and during a part of that time in Des Moines. It afforded our physicians ample opportunity to test the merits of Variolinum. It has stood the test and more than vindicated our claim that it immunizes against the smallpox contagion. Recently in an effort to secure recognition for this method before our State Board of Health, the writer presented to his colleagues a large number of duly attested statements like the following :

To Whom It May Concern.

"This is to certify that my son, Mr Harry Willis, was taken sick with smallpox June 2, 1901, and died on June 18, 1901, from complications. About June 5, 1901, my husband, Mr. John Willis, my sons Clyde and Clifford and I took Variolinum, furnished (through our own physician) by Dr. Linn. All of us were in the house all the time my son Harry was sick and none of us contracted the smallpox as a result of our exposure. In December another son, who was absent during the former quarantine, had smallpox. Again we took the Variolinum and we did not take the disease. My husband was vaccinated in 1863 ; no other member of the family had ever been vaccinated."

(Signed). HANNAH WILLIS,

JOHN WILLIS.

Subscribed and sworn to before

A. J. Mathis, Notary Public.

My colleague, Dr. C. B. Adams, read the following interesting history :

"This is to certify that I attended the family of Mr. J. H. S. during an attack of smallpox in January, 1902. In this family of seven, consist-

ing of father, mother and five children, three children were suffering with the disease in a very severe form. None had previously been protected by vaccination. All refused to be vaccinated, desiring a long period of quarantine for the county support. The father requested me to give all members of the family not suffering with the disease, medicine to fortify their systems so that they might not suffer a severe attack of the disease. I gave them all Variolinum for a period of ten days, with the result that not a single remaining member of the family contracted the disease, although they all mingled freely with the diseased members of the family for a period of forty days."

C. B. ADAMS,

Member of the State Board of Health.

Numbers of persons who had been immunized *by this method only* were subsequently employed as nurses, or were quarantined for weeks at a time with smallpox patients without contracting the disease. Indeed no authenticated instance has yet come to my notice where a patient thus immunized has subsequently contracted smallpox. Furthermore, as if to furnish conclusive proof of the efficiency of this method no one thus immunized can be successfully vaccinated. It has been demonstrated again and again. Neither will any one showing a recent characteristic scar of successful vaccination be affected by Variolinum.

Dr. Edwin Schenk, in his capacity as smallpox physician, was directed by the city physician during the recent epidemic to study the results of the use of Variolinum. He reports as follows: "I continued to keep track of all cases under treatment and, together with cases previously treated, I found the results quite as effective as through vaccination by scarification."

Of the two methods of immunizing, that by Variolinum appeals to the thoughtful as the most complete and effective. The remedy is continued through the period of the disturbance excited by it, the systemic storm is maintained at its maximum, every dose of Variolinum is so much added fuel to the flames; they feed upon the dross of susceptibility and when it is effectually consumed the storm abates leaving the patient thoroughly immune to smallpox. No less important than its power to immunize against smallpox is its power to abort the disease. In this sphere indeed, it is a *ne plus ultra*. It may be depended upon with absolute confidence and it will not betray that confidence. It is a priceless remedy in the hands of physicians treating this dread disease. The writer makes no fanciful claim for the remedy beyond what it has again and again accomplished.

Does it seem like a flight of the fancy to claim that this remedy when exhibited from the date of exposure to smallpox will check it before it reaches the eruptive stage? It is none the less true. Does it appeal to you as little less than miraculous that Variolinum, given continuously from the time of the initial chill, will abort the disease before it reaches the eruptive stage? Verily, it is true.

Does it seem a Utopian dream to maintain that if given from the date of the appearance of the eruption, Variolinum will check smallpox by the time it reaches the pustular stage? It does it.

An able article on this subject from the facile pen of that veteran Dr. H. M. Bishop of Los Angeles, appeared in September, 1901, in the *Pacific Coast Journal of Homeopathy*, which every one interested in the study of Variolinum should read. From this article I quote the following interesting account.

THE CARE AND CURE OF SMALLPOX.

"A man called at my office in the chilly stage of fever, having the aspect of one severely ill. He complained bitterly of a distressing ache in the lumbar region, and of great nausea and headache. On inquiry I learned that he was a general sewing machine agent, and had been introducing his machines in the surrounding manufacturing villages where variola had been prevailing. I felt sure that he was coming down with the disease, and sent him to his room which was on the top floor of a boarding house in the center of the city opposite the post office. I prescribed Variolinum every two hours, taking a dose myself, and gave such other remedies as the various symptoms indicated. For three days the fever raged. On the evening of the third day a most profuse papular eruption appeared, accompanied with a subsidence of the fever. At this juncture I reported the case to the health officer, a physician of extensive experience in the old school. He visited the patient with me, and after carefully examining the case and feeling the shot-like hardness of the papules, so unlike any other eruption, he hesitatingly pronounced it a severe type of smallpox. The next day he called with me again and we found the eruption assuming the vesicular form, so that the merest tyro in diagnosis could have named the disease. He then said that he had been fixing up the pest-house, and would be ready on the morrow to take the patient thither. Now, it was mid-winter; the ground was covered with melting snow and ice, and the so-called 'pest-house' was seven miles away—a barn-like structure that could not be made comfortably habitable even for well people. I therefore strongly objected to the contemplated change fearing a complicating pneumonia. My protest was overruled, and the next morning an improvised ambulance with helpers arrived in front of my patient's abode. When the health officer entered the room the astonished look on his countenance was only equalled by the change that had come over the aspect of my patient, for the eruption on the latter had ceased to develop and was shrinking away. He was not carried to the pest-house, in a few days was up and around. This was no case of varicloid, but a most pronounced case of *variola vera*, with the eruption as thick as possible without being confluent, and no symptom lacking to make a complete picture of this formidable disease up to the fifth day of its development, when it suddenly receded under the use of the Variolinum."

Our efforts to secure recognition before our State Board of Health

failed, *pro tem*. The defeat is only temporary. We were overcome by the splendid voting ability of the non-medical members of the Board—a veterinary surgeon and civil engineer. Next time—and there will be a next time—we shall hope for better success. The writer believes in vaccination; it has served the human family well and saved its millions. Indeed, we are in a measure immune today because our fathers were vaccinated. Smallpox is milder now than formerly because people are measurably immune. Vaccination is good; Variolinum is better.

The writer is somewhat familiar with the regular practice as it is exemplified in this state. Vaccination is their chief aid, practically, their only weapon against smallpox. When vaccination fails, they have absolutely no effective means with which to stay the progress of the disease. It must run its entire hideous, repulsive course unchecked. The stages of invasion, eruption, vesiculation and pustulation regularly follow in regular sequence under the regular administration of our irregular friends. Some of our own people as well as they attend their cases blissfully unconscious of the fact that Variolinum will check the disease in from three to six days. To those unfamiliar with its use these claims may seem extravagant. In truth, they are only what have been demonstrated in competent hands again and again.

Vaccination is only effective as a preventive. Variolinum not only prevents but will check the disease in all stages. Vaccination is good; Variolinum is better.

At a recent meeting the Iowa Homeopathic Medical Society adopted the following definition:

"Vaccination is the introduction of a virus into the system for the prevention of smallpox, and is accomplished either by the administration of a proper preparation of the virus of smallpox through the mouths or by introducing into the circulation the virus of cowpox by applying it to a freshly made scarification of the skin."—*North Am. Jour. of Homeopathy*.

ADDITIONAL FACTS—THE LEGAL STATUS OF VACCINATION IN IOWA.

IOWA STATE BOARD OF HEALTH, DES MOINES, IOWA, Feb. 6, 1904.

EDITOR MEDICAL ADVANCE.

In Iowa the courts have decided that we are entitled to use Variolinum as a means of vaccination. Its legal status is something like this. No school of medicine has any legal or moral right to interfere with the accepted practice of any other school. Our State Medical Society, by resolution, defined vaccination in such form as to include the proper use of Variolinum. Our local society provided rules for its demonstration, and no certificate of successful immunization is accorded in any case unless the proper symptoms are developed.

Every additional day that passes by gives added proof of the efficiency of this method of vaccination. In our practice we do not need the testimony of added experience that Sulphur or Calcarea is a useful remedy in its proper sphere. When we exhibit such a remedy, we know what it will accomplish. Among crude drugs, we know that Ipecac will produce nausea,

and Colocynth will provoke cramps. Their sphere of action is known and demonstrated. We entertain not a shadow of doubt what the result will be when we exhibit Variolinum to unvaccinated patients.

The symptoms are developed with remarkable regularity. They are not uniform in every case, neither are the symptoms provoked by vaccination the same uniformly. In some there will be a marked degree of fever with a high degree of inflammation about the point of inoculation. In the use of Variolinum the symptoms are the same within a limited range. Added experience with the remedy extending over a period of some two years gives uniform results. The remedy is used in many parts of the country, and used successfully.

Herewith additional records which are quite interesting and which are duly attested before a Notary Public :

The son of Mr. R. was taken ill with a mild but typical case of smallpox, on Jan. 26, 1901. No attention was given save the care of the mother. About twelve days later the mother was taken ill with nausea and chills, severe pain in the back and all over the body. The chilliness was followed by fever. I was called and administered Variolinum at hourly intervals, and the following day she was better. No eruption appeared and no further symptoms of smallpox. Two or three days later, I was called to see the daughter, girl of ten years, and found her with a temperature of 103 2-5 degrees. This fever had been preceded by nausea, chilliness, severe pains in the back and all the muscles of the body. She began taking Variolinum when I made my first visit some three days before. I continued the remedy, and when I called the next day I found three or four small red spots on the face and neck. Continued giving Variolinum. On the following day, the fifth during which the remedy had been given, the papules had entirely disappeared, the child was well and has continued so from that time. None of these people had ever been vaccinated and since that day have been released from quarantine.

(Signed) ALICE HUMPHREY-HATCH, M. D.

The following, also duly attested, is further evidence :

"I, M. L. Purdy, being first duly sworn to depose and say, that my father, Mr. A Purdy ; my sister, Miss Nancy Purdy ; my brother, M. L. Purdy and I took medicine internally (Variolinum) for the purpose of internal vaccination, and we did not contract smallpox although exposed a number of times. My sister and father nursed my mother through an attack of smallpox. My sister was never vaccinated. My brother and I were vaccinated twenty-two years ago. My mother, who had the smallpox, was vaccinated when a girl.

"Duly subscribed and sworn to."

These are only examples of scores of duly attested affidavits now in my possession, all of which attest the immunizing power of Variolinum.

In the face of evidence like this, it seems strange that the members of our school, or for that matter any other school of practice, would

consent to inoculate the system with infective material, which may lay the foundation for years of subsequent ill health. In all of our experience with the remedy we have never found a single instance in which any harm has resulted from its use. Occasionally a child may be affected by the use of the remedy sufficiently to require him to remain out of school for three or four days. The effect amounts to nothing more than a slight indisposition, and the average school boy will delight in having sufficient excuse to take a short vacation. But in no instance has any after effect followed the use of the remedy. At a more convenient date, I shall be pleased to give you my theory of its action.

Trusting that this information may awaken in the minds of your readers enough interest to induce them to investigate the merits of Variolinum as a prophylactic, I am,

Very truly yours,

A. M. LINN.

The Medical Advance, February 1904.

HOMEOPATHY AND EHRLICH'S HYPOTHESIS.

BY ALFRED DRURY, A. M., M. D.

Paterson, N. J.

SIMILIA Similibus Curentur is, we believe, a law of Nature. Results in thousands of cases combine to establish this contention. We observe the law of similars because we accept the evidence of our reason and the confirmation of our senses. But how the drug homœopathically administered acts upon the economy and the method by which it exerts its healing properties is still a matter of surmise. Many conjectures have been advanced from time to time to explain the phenomena, but none seems to be entirely satisfactory. A theory which is based upon an hypothesis, now generally accepted by the scientists, should not, therefore, be without interest. And, if it encourage any to believe that the principle of Homeopathy is indeed a law of science, the time devoted to its consideration will not be ill-spent.

Theories form the basis of all existing laws of science. The experimenter, noting that definite results always follow the same causes, formulates an hypothesis which explains this action. If the hypothesis hold true in all cases, it becomes to be known as a law. Such is the law of Avogadro in chemistry, or that of Newton in physics.

The theory which will be considered at this time is based upon the "side-chain" hypothesis of Ehrlich. My attention was directed to its bearing upon Homœopathy, by an article of T. Mitchell Prudden, M. D., in the *Medical Record* of Feb. 14, 1903. He said there: "We conceive of the cell as a mechanism for the storage of energy derived from without, and for its release under definite conditions. The details of this metabolism still elude the keenest scrutiny of the chemist. But Ehrlich seeks to explain the cell's performance in general terms. The cell consists of a cen-

tral group of very complex molecular combinations which maintains the characteristics and special capacities of the cell as an organism during all its existence. Associated with this central organic group are many and varied subsidiary atom complexes, which, by means of their unsatisfied affinities, bring the central group into relationship with nutritious or toxic material. These unsatisfied affinities, by which assimilable material is fixed or united to the cell, are called side-chains or *receptors*. The cell is capable of selecting or fixing out of the host of various substances with which it comes in contact just those and only those to which its receptors bear a definite chemical relationship." Such is a brief summary of Dr. Prudden's argument. It follows, then, that when a drug is taken into the system, if it have any effect, it will be because it has entered into chemical combination with a suitable receptor of the cell. If it does so combine it has an effect upon the special functions of the cell, and the resultant derangement of the normal action manifests itself by general symptoms. Thus, although we can not always discover what special changes take place in the cell, we are able to note what systems the drug produces, and we find that certain "characteristic" ones will always result from the action of the same drug. We know then that this drug has the power to combine with receptors of a particular group of cells, and from its action upon the cells will always cause definite results to manifest themselves. These results are called the pathogenic symptoms of the drug. Minor symptoms may vary in different individuals, but the same characteristic ones will appear in all cases.

Now biologists tell us that when a cell is damaged it immediately begins to regenerate its lost parts. If the pathogenic action be too strong it destroys the cell, but if the action be mild it merely serves to stimulate the cell to an increased activity, which will restore the loss and repel the invading force. Nutritious materials will keep the cell in a state of normal activity, enabling it to perform its functions, and, when in perfect health, to resist all noxious influences. For the receptors appropriate not only the food necessary for the nutrition of the cell, but also materials which may be formed by the cell into varieties of substances that will protect it against harmful agencies. Among the substances which the cell elaborates for its protection are those known as "anti-bodies." They are atom-complexes which float in the blood and combine with the unsatisfied affinities of the toxins, thus making them innocuous. These constitute an important part of the natural protective force that all living things possess.

Bearing these points in mind, let us now consider how this theory will help us in our treatment of the sick. A patient presents a group of symptoms. Evidently there must be something wrong with particular cells somewhere, and these symptoms have resulted. Ehrlich's hypothesis assumes that a toxic substance has entered the body, found receptors with available affinities, and by chemical action has joined itself to these receptors and so affected the cells. The particular cells attacked may be ascertained from a knowledge of pathology, morphology and the physical signs presented. Or if all the symptoms be studied with sufficient minuteness we may correctly

diagnose from these alone what cells are probably affected. How may these cells be treated so that they will resist the toxin? This is what we physicians should know in order to most benefit the patient.

The theory of anti-toxin deserves attention. According to Ehrlich, the cells being acted upon by the toxic substance proceed to regenerative action and manufacture more receptors. Weigert has emphasized the fact that the regenerative impulse is apt to exceed the actual requirements. So the receptors, some of which are occupied by the toxins, are manufactured in excess of the demand, and many of them are thrown entirely off from the cell and float free in blood. The blood, then containing large numbers of these free receptors, that have an affinity for particular toxins, becomes an anti-toxic fluid. For the toxins form a chemical union with the floating receptors, and thus having their affinities satisfied, become innocuous and pass harmless through the system. This anti-toxic serum may be transferred to another individual and combat the disease there. So the receptor which attached to the cell was an element of vulnerability, when floating free in the serum becomes an anti-toxin and a protection. In this manner the toxin neutralizes the effects which it itself causes. (This is isopathy, the first cousin to homœopathy). The method has, however, some disadvantages. On account of the necessary inoculation there is always danger of wound infection and sepsis. The serum may contain other ingredients beside the anti-toxic ones, and these may work mischief. The anti-toxin is a specific against one disease alone and less it is potent against the affinity of but one group of receptors. These drawbacks, however, are not enough to militate against its use could we find nothing better.

Let us not consider Homœopathy in the light of this hypothesis. From our drug provings upon the healthy we have obtained the pathogenic symptoms of a number of drugs; that is, we have found what drugs have a specific action upon particular cells. When a sick person presents a group of symptoms we have evidence of the presence of a morbid agency that is damaging particular cells by combining with their available receptors. We shall cure this sick person if we can stimulate the affected cells to regenerative action or set up in those attacked or threatened, the natural protective forces of the healthy body. Either of these procedures will overcome the effect of the poison. So the correct remedy is the one that will act upon this particular group of cells. We may then with confidence choose a drug which has produced a similar group of symptoms upon healthy individual. For this remedy will have a chemical affinity for the unsatisfied receptors of the identical cells which are attacked by the toxins and will combine with them.*

* It is probable that the drug combines with the cell through a different set of receptors than those which have an affinity for the toxin. For the drug is not the same as the toxin. And the union will be more certain if made through unoccupied receptors, than if attempted through those already chemically satisfied by the toxins. We claim that a remedy, similar in effects to the toxin, should be used to combat it. Not more of the same poison.

A small amount of this homoeopathic remedy will be sufficient to stimulate the cells to regenerative action, spur them to the manufacture of the anti-bodies which render the toxin harmless, and set up in them the normal protective forces which will resist and overcome the morbid agencies. For chemically there exists no affinity between the drug and the cell receptor, and physiologically a diseased cell is very susceptible to influences of any kind. As a single cell is very tiny, and as the remedy given will affect single cells, a small quantity will usually suffice to do the curative work and will not damage the disease-weakened cell. If we could always choose the exact remedy, an infinitesimal amount would be sufficient every time.

By this theory we may understand why some individuals are immune to certain diseases and drugs. The toxin may enter the system, but if it possess no affinity for the cell receptors, or the suitable receptors be pre-occupied, or there be present floating receptors or anti-bodies with affinities for the toxin, the poison will be unable to act upon the cells and will be powerless. A medicine chosen with precision will combine with a particular group of cells which may be threatened and cause the cells to manufacture the anti-bodies which will protect them. Our homoeopathic drugs are ideal prophylactics because of this action upon specific cells. On account of the minimum quantity necessary to set up the action, there need be no cause for the dangerous after-effects which so frequently follow the administration of other preventives.

These are a few of the results which Ehrlich's hypothesis seems to satisfactorily explain. It would doubtless give the reasons for other remarkable effects that follow treatment by the indicated remedy.

In conclusion we may briefly sum up as follows:—A cell will combine with those substances and only those for which its receptors have a chemical affinity. It uses the food with which it combines for nutrition and for the formation of anti-bodies which disarm the toxins by uniting with them. If the cell be damaged by a mild force it will at once start to regenerate the injured parts.

Toxins cause certain symptoms because they attack particular cells through an affinity for the receptors of these cells.

Drugs produce certain symptoms because they combine with particular cells.

Therefore, when a group of symptoms proclaims that particular cells are attacked, a drug which has produced similar symptoms will have an affinity for the receptors of the affected cells and if given in small amount will stimulate them to exercise their normal protective and regenerative force and so exterminate the trouble at its center.

This theory gives a simple reason for the truth of the dictum of Hahnemann, that a drug given according to the law that similars should be cured by similars, "will obliterate the disease in its entire extent in

the shortest, safest and most reliable manner."—*The North American Journal of Homœopathy*—February, 1904.

Acknowledgments.

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IONS IN BIOLOGY AND MEDICINE.

BY AN IONIST.

I am an Ionist. I live in the domain of imagination and can conceive how ions of biology and medicine act in their multifarious phases. It is certain that apology is not necessary to declare this medical faith. The belief pertains to all classes of medicinal substances and medical men. The consideration of the ultimate particles of medicine in their action in health and disease is only conceivable in the present state of the biological and physical sciences. Their future development will help a better solution of many mysterious questions than at present. Without any fear of being ridiculed, it may be said that the conception is not meant for those who can not grasp the idea of the fine particles of an ion, now demonstrated by Crookes in the behaviour of the ions of radium. Heavy and ponderable drugs and druggings may not lead to that fine idea, but there are orthodox men of medicine who think of ions in biology and medicine. Physiologists speak of ions, in the display of the function of the nervous system. Whatever may be, precedence will not help in establishing a disputed question of this nature in science. A

tribunal of law may believe in the authority of persons. Science unless backed by experimental and analogical facts does not allow any assumption. Law, drafted and enacted by men of authority, is mis-interpreted, mis-constructed, mis-represented, and mis-idealised, consciously or unconsciously. Frivolous contentions in law often present a serious spectacle in a court of law, to the gain of lawyers. Every concerned person seems to turn round and round as in a labyrinth. Judges, advocates, pleaders and attorneys shew an amazing spectacle in explaining the words of a law-maker. They will not accept his explanation as given out in his speech. They contend for meanings of words and words to suit their own convenience. It is not so with men of science and medicine. They have to explain and understand the significance of phenomena or a group of symptoms based on natural or morbid changes. For a homœopathist, an additional task is imposed. The pathogenetic and pathological symptoms are to be explained, conceived and digested for careful comparison. Any mis-understood symptom of significance may cost the life of a patient. The dangerous state of a sick person is fully manifested to all. The medical attendant should either abate the danger or seek relief of his responsibility by consultation or change of situation.

A pertinent question may be asked. What the conception of ions has to do with medical treatment? The answer is, it will help the judgment in forming a tolerably good idea of the pathogenetic action of drugs and the pathological changes. The units of change caused by a drug for proving and the units of alteration of a tissue from disease render an interesting field for imagination. Solid geometry is to be studied from plain surfaces. The plain surface is further analysed into lines and points. My view is, the complicated action of medicines and morbid tissues must be studied from the basis of points. These points are our ionic atoms or units of physiological and pathological conceptions. Then there are worlds of units—units in mathematics, electricity physiology, and pathology. The ion-units in physiology are cells, in pathology microbes, and the

finest morbid materials. After all, it can not be said that the theory of ions in medicine, is an ill-judged conception.

A few practitioners of the Orthodox School can understand the theory of ions in medicine. They can conceive the action of ions of matter in physics and physiology. Ask them, whether they can form any idea of the infinitesimal dilutions in homœopathy? They will stand aghast, and absolutely out of the old ingrained ideas will say, no! A few thoughtful men among them will hesitate to answer. Further persuasive questions will bring forth an affirmative reply. Most of them can understand the law of homœopathy. Some of them even believe it. But they will emphatically declare that infinitesimal dilution is a delusion. If they think of harmonising the several facts in physics, chemistry, physiology and medicine on the basis of ions, their difficulty at once disappears.

The position of a monist with that of an ionist claims a consideration. Monism is thus defined: "The doctrine that in the universe there is only a single element or principle from which every thing is developed, this single principle is either mind (idealistic monism) or matter (materialistic monism)."

It is my intention to deal with materialistic monism: Haeckel, in his *History of Creation* says:—

"Scientific materialism, which is identical with our monism, affirms in reality no more than that every thing in the world goes on naturally—that every effect has its cause and every cause its effect. It therefore assigns to causal law—that is the law of a necessary connection between cause and effect—its place over the entire series of phenomena that can be known. At the same time, it positively rejects every belief in the miraculous, and every conception, in whatever form it appears, of supernatural processes.

Accordingly, nowhere in the whole domain of human knowledge does it recognise metaphysics, but throughout only physics; through it the inseparable connection between matter, form, and force becomes self-evident."

The principle of evolution is based on monism. Darwin limits

it to living animals. The elementary animalcule is conceived to be protozoa. According to Haeckel it is monera. The Haeckelian view of moneron is not accepted by the majority of biologists. Haeckel goes a step in advance of Darwin, and claims the genesis of living species from an inorganic substance, which remains unknown. The connecting link between animated creatures and inanimated substances can be formed by the process of archigony. It will not be out of place to inform that Prof. Heerara of Mexico has produced artificial protoplasm. His labours with calcium metaphosphate have proved that natural protoplasm is composed of this salt, impregnated with various substances absorbed or secreted under special osmotic and electrolytic conditions. Transparent vacuolated bodies of homogeneous structure, and of the consistency of natural protoplasm have been created, and they have very striking analogies with protozoa in general, changing shape, swelling, dividing and, on treatment with salt solution, forming plasmodium. Prof. Heerara has shown several micro-photographs which he has prepared, and which demonstrate calcium metaphosphate, in actual movement in salt solution.

If we can rely on this experiment, then the old question of the usefulness of protoplasm with or without nucleus comes again to the front. In other words, whether the force of ions are first manifested in protoplasm or nucleus? If we consider that both shew their kinetic energy on account of the ions, then we do not come to a final solution. The primary seat of the ions is to be considered. Whether protoplasm or nucleus first comes into existence? It can be assumed that protoplasm first takes its birth. Most probably nucleus is formed after the creation of protoplasm, and from protoplasm. In one view, nuclei are foci for vigorous action as portions of consolidated protoplasm. On the other hand it is said that,

“As to the nucleus, one at least is present in almost every cell. It used to be said that some very simple animals, which Haeckel called Monera, had no nuclei but in many cases the nuclei have now been demonstrated. In other cases, e. g.,

some Infusorians, the one clear material seems to be diffused in the cell substance. The red blood cells of Mammals seem to be distinctly nucleated in their early stages, but there is no trace of a nucleus in those which are full grown."

The complex nature of the argument can only be avoided and made simple by the assumption of the first birth of the one or the other. The above opinion has been taken from the Outlines of Zoology by J. Arthur Thomson. With due deference to his opinion I insert another. It is from the Hand-Book of Physiology by W. D. Halliburton. He says thus of a human red or coloured corpuscle :

"When viewed singly they appear of a pale yellowish tinge ; the deep red colour which they give to the blood is observable in them only when they are seen *en masse*. They are composed of a colourless, structureless, and transparent filmy frame work or *stroma*, infiltrated in all parts by a red colouring matter termed *haemoglobin*. The *stroma* is elastic, so that as the corpuscles circulate they admit of changes of form, in adaptation to the vessels, and recover their natural shape as soon as they escape from compression. The colouring matter uniformly pervades the stroma. The consistency of the peripheral part of the stroma is greater than that of the more central portions ; this plays the part of a membrane in the process of osmosis that occur when water or salt solutions are added to the corpuscles.

"The red corpuscles have no nuclei ; the unequal refraction of transmitted light gives the appearance of a central spot, darker or brighter than the border, according as it is viewed in or out of focus. Their specific gravity is about 1088.

"The corpuscles of mammals, with the exception of the camel tribe are circular and biconcave. They are generally very nearly the size of human red corpuscles. They are smallest in the deer tribe and largest in the elephant. In the camelidae they are biconvex. In all mammals the corpuscles are non-nucleated, and in all other vertebrates (birds, reptiles, amphibia and fishes) the corpuscles are oval, biconvex, and nucleated and larger than in mammals. They are largest of all in certain amphibians (*amphiuma*, *proteus*)."

During foetal life, in the period of the first formation of the blood vessels, the red corpuscles are nucleated. The same condition is observed when the liver begins to be formed. The red cells, then, perform another function besides the ordinary duty of after-life.

In the white corpuscles of human blood one or more nuclei exist in each corpuscle. It is supposed that the phagocytic power of a white cell depends on the number of nuclei. The nucleated state of the corpuscles, both red and white, enables them to perform amoeboid movement.

These facts lead us to infer that in the first genesis of animal cells, protoplasm may exist without a nucleus. The formation of nucleus takes place probably when the complex existence of protoplasm becomes due. The following from Arthur Thomson shews the high function of nucleus in contrast to the low existence of protoplasm without nucleus :

“The nucleus is a very important part of the cell, but it is not possible to define precisely what its importance is. In fertilisation an essential process is the union of the nucleus of the spermatozoon or male cell with the nucleus of the ovum or female cell. In cell division the nucleus certainly plays an essential part. Cells bereft of their nuclei die, or live for a while a crippled life. According to some the nucleus is important in connection with the nutrition of the cell, and it is generally believed that there are complex actions and reactions between the living matter of the nucleus and that of the cytoplasm. Perhaps we may venture to say that cytoplasm and nucleoplasm form a ‘cell firm,’ potent only in their mutual dependence.”

The high and complex life of a nucleus makes it evident that it performs functions which can not be performed by protoplasm. At any rate, the inference will be on the side of possibility, if protoplasm alone be said to be the first product of ions.

The ionic activity is manifested in other ways shewing a touch of the process of archigony. The first step, it may be said, was taken by Dr. Ringer when he found that contractile tissues as heart, cilia, etc., shew their activity in certain saline solutions

disconnected from their natural situation. Halliburton in his lecture, *The Present Position of Chemical Physiology*, says : "Howell goes so far as to say and correctly says, that the cause of the rhythmical action of the heart is the presence of these inorganic substances in the blood or lymph which usually bathes it. The subject has more recently been taken up by Loeb and his colleagues at Chicago ; they confirm Ringer's original statements but interpret them now as ionic action. Contractile tissues will not contract by impure solutions of more electrolytes like sugar or albumen. But different contractile tissues differ in the nature of their ions which are their more favourable stimuli. An optimum salt solution is one in which stimulating ions, like those of sodium are mixed with a certain small amount of those which, like calcium, restrain activity. Loeb considers that the ions act because they affect either the physiological condition of the colloidal substances (proteid, etc.) in protoplasm or the rapidity of chemical process.

"Amœboid movement, ciliary movement and karyokinesis all fall into the same category as being mainly dependent in the stimulating action of ions.

"Loeb has even gone so far as to consider that the process of fertilization is mainly ionic action ; he denies that the nuclein of the male cell is essential, but asserts that all it does is to act as the stimulus in the due adjustment of the proportions of the surrounding ions, and supports this view by numerous experiments on ova in which, without the presence of spermatozoa, he has produced larvæ by merely altering the saline constituents and so the osmotic pressure of the fluid that surrounds them. Whether such a sweeping and almost revolutionary notion will stand the test of further investigation must be left to the future ; so also must the equally important idea that nervous impulses are to be mainly explained on an electrolytic basis."

Whatever may be said against the advanced theory of the ions in reproduction, it should be acknowledged that ions, as the kinetic basis of cells, display an energy which produces so many remarkable results.

For the sake of practical application of the ionic theory it may be inferred that according to the different nature of the cells, the different ions will act in their, respective sphere. The ions of connective tissue-cells must be different from those of the blood-and nerve-cells. Perhaps, it will not be wrong to assert that the activity of the tissue-ions mostly depend on the blood-and nerve-ions. The most potent energy is displayed by them. The blood cells derive their kinetic action from their ions. The white cells can perform their amœboid movement and phagocytic power for their ions. The ions of blood allow it to perform its proper function. The temporary cessation of the ionic function of the arterial coats as formed by the connective tissue-cells, produces congestion or inflammation. Blood as a connective tissue bears affinity with that part of the disorganised blood vessels. The red cells form into rouleaux. These rolls fasten and cluster together. The ionic activity of the tissues remains suspended. The amœboid movement of the white cells produces several distinctive features. The migration of the cells to the surrounding tissues, and the phagocytic power of the cells depend on their ionic activity. There is exosmosis.

The peculiar feature in inflammation is that the red blood cells and blood vessels of the affected part partially lose their ionic function. The supplementary effort to lessen the stasis and diminish the tension of blood is performed by the white cells by their migration. Any foreign matter is also attacked and digested. Limited inflammation is remedied by limited migration. In fact, the ionic activity of the white cells is increased during inflammation. There the compensatory power of nature is manifested by the ions. When the power of compensation is lost and tends towards inactivity of all kinds of the affected ions, then other morbid forms ensue. Or in other words, the comparative loss of power of the ions of the white cells, is a sign of another danger. The increased activity of those ions by endosmosis tends to resolution. The out-flowed plasma and corpuscles are absorbed. The loss of power of the white cells may be due to either the over-powering influence of bacteria, other foreign substances, or the great failure of strength

of the tissues concerned from several causes as violent wound, diabetes and other diseases. They all prevent endosmosis.

In some cases, the diapedesis of the white cells favours the emigration of the red corpuscles. This is possible when the holes made by the emigrating leucocytes do not close up immediately. Inflammation helps, firstly, the emigration of the leucocytes which are retarded in their movement in the affected part. The secondary result is the diapedesis of the red corpuscles through the impeded venous circulation. There is difference in the action of the two kinds of corpuscles. The leucocytes emigrate by the force of their amoeboid movement. This should be considered, the primary compensation to relieve the tension of the affected vessels. On the other hand, when the tension is not relieved by the primary effort, the secondary process ensues. The red blood corpuscles are forcibly squeezed out of the inflamed veins. Their amoeboid movement being absent, other kinetic manifestations of the concerned ions, help to perform a quite different mode of work.

Ulceration is nothing but a breaking down of the tissues concerned in inflammation. The ionic energy of microbes, etc., destroys the ionic influence of the tissues, including the blood. In another shape we see the struggle for existence of the different kinds of ions, and the most powerful survives. The destined time for formation, development and decay does not rule the physiological and the pathological substances, as is supposed by Dr. Abel with regard to the life of ammonites. The struggle for existence of the physiological and the pathological ions forms the life of man and other animals. The struggle of the physiological ions is for preservation. The struggle of the pathological ions is for destruction. The increased activity of the physiological ions tends to the progressive nature and thus performs the evolutionary changes. Atavism is a partial cessation and mis-direction of function of the concerned ions. I consider atavism is a change towards mis-representation of formation not re-assumption of structural heredity.

All these facts slowly lead us to the consideration of life and

death. Various views have been forced to our notice but the most acceptable among them are the following: "Generalising from his studies on colour sensation, Professor Hering was led to regard all life as an alteration of two kinds of activity, both induced by stimulus, the one tending to storage, construction assimilation of material, the other tending to explosion, disruption, dis-assimilation. Generalising from his studies on nervous activities, Professor Gaskell was led to regard all life as an alteration of two processes, one of them a running down or disruption (katatolism), the other a winding up or construction (anabolism)."

The disruption may be due to several causes. It has several forms. Death from disease is a slow dissolution. The period of suffering depends on the energy of the morbid material. Sudden death from any accident is manifestly the violent cessation of the physiological ionic function. Dissolution from any other cause is a slow or rapid decay of the constructive ions. The pertinent question that can be asked is, whether the several physiological and pathological ions remain as they are, after death? The probable inference is that some of the biological ions may change shape and the others remain as they are. The study of the lives of microbes renders a valuable assistance in arriving at a conclusion, from which inference will be possible as to the lives of ions. It is true that some of the biological ions change but in what physical constitution of matter they are assimilated, it remains unknown. It may be that the last destination of the biological ions is some inorganic elements, which have close affinity with the sun, or they find their way in earth water and air. The last forms may be a transitional stage of the first.

(To be continued.)

PROLONGATION OF LIFE.

II.

(Continued from last number, p. 145.)

The next subjects touched upon by Sir Hermann Weber were food and the digestive system, attention to which is as much needed as to the circulatory and respiratory systems. Here he says no hard and fast rules can be laid down. He insists however upon great moderation in the amount of food and drink, and especially of the most nourishing articles (flesh food and pulses), particularly in the case of old people, for whom a very small amount of food is necessary. The term "moderation" must be understood to have a different meaning for different persons and is to be judged individually. Many people, he adds, who eat large quantities of meat, eggs and other highly nutritive substances, often gradually develop changes in their blood vessels and other organs, which though imperceptible in the beginning, may later on show themselves as gout, arterial hypermyotrophy, atheroma of arteries, glycosuria, disease of the liver, the kidneys, &c. The facts collected by the Investigating Committee of the British Medical Association, show that the majority of the persons above 80 years had eaten only little meat. L. Cornaro of Venice who wrote a work on temperance at fourscore, and who lived to over hundred, and died without pain or agony, "like one who falls asleep," was very abstemious in his diet; and Abernethy who recognizes the practical correctness of Cornaro's precepts, gives also the following advice. "Get up before sunrise and get to bed after sunset. Sluice yourselves every morning, winter and summer, with cold water. Lie on your back every day after dinner."

Sir Hermann is an advocate of mixed diet. His conviction, based on ample experience, is that most people enjoy better health and live longer with only little meat and flesh food, and a larger quantity of vegetables, along with milk and its derivants. He is at one with Dr. George Cheyne and Sir Henry Thompson in advising old people to lessen the quantity and lower the quality of their food gradually as they grow older, even before

the decay of appetite. He adds, in the majority of cases increase of weight after 70 or 75 is not good, and corpulence is to be counteracted by all means. A slow decrease is mostly observed in those who reach a very advanced age.

As many forms of indigestion and many states of imperfect nutrition of the whole body, arise from what is called bolting the food, or washing it down before it is properly chewed, our lecturer next advises thorough mastication—an advice often given and as often neglected. As the juices in the stomach cannot act on food unless it is reduced to a pulpy state, nothing ought to be swallowed until it has been perfectly comminuted by mastication and transformed into a kind of pap by admixture with saliva. Taking much fluid during meal is in itself a bad habit, and may prevent proper digestion.

After dismissing the purely nutritious substances with these few general observations, Sir Hermann turns to some of the most commonly used narcotics, and food accessories. He is decidedly of opinion that alcohol taken in any large quantity diminishes the resisting power of the organism against chills, microbes and other causes of disease, and this resisting power is one of the great agents in the prolongation of life, and ought to be strengthened in every possible way; and so, he says, "alcohol is not necessary to healthy persons and most men would be better without it." "Yet," he adds, "a small quantity of wine or whisky or cognac or beer, according to the individual conditions is to most persons not injurious, to some even useful;" and that moderate and exactly regulated quantities, are often beneficial to old people.

All doctors are not however unanimous in this opinion. That alcohol has some medicinal use, is acknowledged by all medical men, but this use, to quote Dr. R. E. Dudgeon, "is very limited. The regular use of alcoholics, even in moderate quantities, is unfavourable to longevity, as the statistics of insurance offices which offer special terms to abstainers prove, and it is the cause of many of the diseases which afflict humanity." Of the sixteen medical officers who took part in the discussion held at the last

annual meeting of the British Medical Association on the relationship of alcohol to mental disorders, Dr. G. A. Reid was of opinion that alcohol when taken in excess was a poison, and the cause of a large mortality, but that "like disease, it is the cause of an evolution protective against itself." Dr. C. Mercier pointed out the enormous value of alcohol as a stimulant in states of exhaustion and as a hypnotic in many cases of insomnia, but he confessed at the same time that the same dose given at the same rate produced very different effects in different people. "The feeling" of the President, Dr. R. Jones, "was that under the control of the reasoning and moral faculties, alcohol under certain conditions was of advantage." Five other doctors did not pronounce any decided opinion on the subject, and the following is a summary of the opinions of the remaining eight:—

Dr. T. B. Hyslop stated that the use of alcohol is 'abuse' in health. Dr. W. L. Andriezen said that alcohol abolished the subjective sense of fatigue, and was therefore a dangerous beverage. It also deprived the tissues of oxygen so necessary for their normal functioning; and produced disharmony of action between the cortical centres of various kinds. Dr. W. Harris believed that alcohol was not a stimulant, but a direct depressant and narcotic. Dr. F. Beach found on enquiry in company with Dr. Shuttleworth, that a large percentage of the idiots admitted into the Darent and the Royal Albert Asylums were the children of intemperate parents. Dr. J. J. Ridge said that alcohol produced degeneration of the individual, and that in the case of moderate drinkers this was slowly produced and did not show itself until after the age of 60. Dr. J. F. Flashman denied that alcohol restored the nerve energy even temporarily, and expressed as his opinion that it acted by abolishing only the sense of fatigue. Dr. D. Yellowlees observed one kind of alcoholic insanity—the melancholia—to occur about the climacteric period in persons who had been addicted to drinking in earlier life. Dr. W. F. Robertson attributed the greatest importance to the effects of alcohol in damaging the defensive forces of the body, general and local, and so opening up the way to bacterial attack.

To the question whether it would not be wise to take a little alcohol, Sir Victor Horsley has returned the following reply, "No, it is not wise. If you take it you must understand that you take it as a luxury. We do not yet fully know the effect of alcohol in the body, but we do know that its stimulating effect is followed by a longer depressant effect, and that from the physiological point of view even small quantities are no good." Even the editor of the *British Medical Journal* says "it should not be forgotten that even a small amount of alcohol is sufficient in some individuals to give origin to alcoholism, and that the medical profession ought to set its face against drink in the same way as it has against dirt and other causes of disease."

Sir Hermann Weber is also in favour of tobacco, if taken with moderation. According to him, it soothes nervous irritability, and makes men often look more contented in their troubles; but to some persons it is injurious. He adds however that excessive smoking is bad for the heart, the digestion, the nerves and the throat. He is in favour of snuff also, a pinch of which taken once or twice a day is good for people with stuffiness of the nose, as it renders the breathing through the nose more easy, and maintains to a certain degree the sense of smell by acting on the capillaries of the Schneiderian membrane.

As in the case of alcohol, we do not yet fully know the effect of tobacco on the body. There are some persons to whom tobacco smoking does no apparent injury; on the contrary, they enjoy its soothing and comforting action, but not till after a long use. But there are many who can never get over its pathogenic effects, and to whom therefore it tends to become harmful (Dr. R. E. Dudgeon). If taken in moderation, its bad effects on mature organism, may not be palpable in the beginning. The inhaling of the smoke of tobacco is injurious, and the greater the quantities that are drawn into the lungs, and made to come into contact with the surfaces of the mucous membranes of the upper air passages, the greater the injury. In comparing the effect of tobacco on different persons, it must

also be borne in mind, that it has many varieties, and that some of these contain a large amount of the poisonous alkaloid, nicotine, while in others that constituent is almost wanting.

But whatever may be said of the effects of tobacco on adults, the best authorities on the subject are unanimous in saying that "it is highly deleterious to the system of growing youth." (Dr. Ch. Gatchell of Chicago). The evils of juvenile smoking are now acknowledged universally, and attempts have been or are being made in many countries to suppress it. Thirty-three States of the American Union have set their faces against the evil, and enactments against it have been passed in Norway, Canada, Tasmania, Bermuda and Prince Edward Island. Even conservative England has been roused to take action in the matter. The evil has spread in this country also, and we hope our energetic Viceroy will take effective measures to put it down.

Amongst the food accessories, notice has been taken of tea, coffee and cocoa. Sir Hermann is not one of those who recommend tea and coffee as altogether wholesome, nor does he range himself with those who condemn them entirely as poisons. He says, tea, when taken in moderate quantity and strength exercises a pleasant effect on the nervous system, especially in physical or mental fatigue and is not injurious to the majority; but in some persons, particularly amongst those affected with dyspepsia and heart weakness, it produces sometimes disturbance of the heart, the stomach and the nervous system. He adds, in some people coffee causes indigestion and tendency to piles when taken habitually, while tea does them no harm. On the other hand, many of those in whom tea produces flatulence and faintness can bear coffee quite well. According to Sir William Roberts tea is an inhibitor of salivary digestion. Others say that coffee likewise has an inhibitory effect on stomach digestion. Parkes says coffee is especially useful to soldiers undergoing fatigue. More than a century ago, Hahnemann pronounced his opinion on this subject. He declared that tea and coffee were not articles of food, but medicine to be taken for some particular diseases, and he deprecated their indiscrimi-

nate use as every day beverages. In our time Dr. Dudgeon is foremost in supporting this view. As regards tea he says "there are many persons who cannot drink it even in moderate quantity without suffering. The milk and sugar with which tea is usually combined, render the combination to a certain extent nutritious, but the tea in the compound does not contribute to its nutritive property, though the adjuncts may diminish its toxic properties." "Coffee is not a nutriment. Its toxic properties," he adds, "are more pronounced than those of tea."

But though tea and coffee are not nutriments, cocoa and chocolate are really most nourishing articles of food and have much sustaining power in fatiguing exercises. The constituent upon which the peculiar value of cocoa depends is the theobromine, an alkaloid chemically almost identical with the bitter principles, theine and caffeine found in tea and coffee. The cocoa prepared from cocoa nibs is well borne by most persons, but that prepared from the finely powdered kernel disagrees with some on account of the fat which is in it, but which is remarkable for its freedom from every tendency to become rancid. The ordinary chocolate mixed with much sugar does not agree with some dyspeptics. The full effect of cocoa on the body, especially on the nervous system, has yet to be studied.

(To be continued.)

THE PHYSICIAN OF THE FUTURE.

THE *British Medical Journal* along with many other periodicals complain "of the lowly estate of the medical profession, of the neglect with which it is treated by governments, principalities and powers, of the imperfect appreciation of its services shown by the public, and of the manifold wrongs which it suffers at the hands of society." Our contemporary points out that these discontents "are partly to be found in the operation of economic laws which affect medicine in the same way as they affect every other profession or industry; partly in the uncertain nature of the knowledge on which the healing art is largely based, and the consequent defects in our therapeutic equipment;

partly too on the new conception of the true function of the physician which is almost imperceptibly being produced by the evolution of scientific medicine." He then goes on to say, "as medicine approximates to the character of an exact science, its chief end tends to change from the cure to the prevention of disease. In the defence of the public health its most conspicuous triumphs have been won, and in that direction lies the hope of its future expansion."

This subject has been ably dealt with by the eminent French physician, Dr. Héricourt, in an article in *La Revue* of February 15th, and the substance of this article has been reproduced in a leading article in Number 2252 of the *British Medical Journal*. Dr. Héricourt has pointed out the disadvantages under which the doctor of the present day practises his profession. He says that as a rule, the doctor never sees a disease till it is near its end. Before this state is reached the illness has perhaps passed through two phases—one corresponding to the onset, the other to the reaction of the organism against the attack. It is during these phases that patients most urgently need help, but it is during these stages that the aid of the medical practitioner is never sought. He is called in only in the third stage when the disease has already obtained a firm hold on the patient, and when treatment can have little or no influence on its future course. What, for instance, can all his art do in cases of established Bright's disease, cirrhosis of the liver, or diabetes, beyond relieving symptoms, and perhaps, arresting the further progress of the malady? In the third stage of tuberculosis and in the most acute infectious diseases he has practically no control over the course of events. Much however could be done to prevent the development of kidney or liver diseases or diabetes, if the early disorders of nutrition of which they are generally the outcome could be removed. Tuberculosis again can be cured in the early stages, and the sanitarian, if he is properly qualified, can to a certain extent stamp out infectious diseases in their first stage.

This reluctance on the part of people to go to doctors in the first stage of the disease, Dr. Héricourt traces to the fact that the physician has to find his means of livelihood in the sufferings of his fellow-men, and justly adds that it can never be removed

until the doctor devotes his whole soul to the prevention of disease. The maintenance of the highest standard of health in all the members of the community within the sphere of his influence should be his occupation and a source of pride. The medical officers of the army and the navy, for instance, are already in this happy position. Their duty is to detect the beginning of disease and at once to check the spread of infection, to become in short a hygienist rather than a physician or surgeon; and the direct measure of their efficiency is the absence of disease among the men under their care.

Dr. Hericourt is strongly of opinion that the principle of employing medical practitioners as guardians of private health should be applied to civil life on an extended scale. All railway, trading and manufacturing companies should have medical officers to watch over the health of the workers in their employ, and so should all families and all educational and charitable institutions. The duty of these medical officers would in the first instance be to prevent illness; but if disease made its appearance they would be better able to treat it than a stranger hastily called in when the case had already assumed a serious aspect. There are also many other duties, such as the sanitation of towns and villages, which cannot be done effectually without state aid and state supervision. But for a physician to be able to fulfil the function which Dr. Hericourt assigns to him his scientific knowledge must be of a higher order than at present, his judgment must be more certain, his powers of observation closer and keener. "He will have to act on a correct interpretation of signs, on an exact appreciation of fine shades, on a logical prevision of consequences and possibilities."

He should have another qualification not referred to by Dr. Hericourt—he must not be a slave to any particular system of medicine. He must bear in mind that the vital dynamical laws combine with the mechanical and the chemical in maintaining life. He must recognize the one generalization which has revolutionized the science of therapeutics, and try to discover others to complete the superstructure. Until the physician equips himself with all these qualifications, he will not be fit to "take the place that rightly belongs to him as the most important functionary in an enlightened state."

EDITOR'S NOTES.

Seventieth Anniversary of Dr. Wesselhoeft.

On the evening of 23rd March the medical profession as represented by the homœopathic physicians of Boston, entertained Dr. Conrad Wesselhoeft with dinner, and presented him a golden cup and a purse of over two thousand dollars. We congratulate Dr. Wesselhoeft for the high honour with which he is esteemed by his colleagues.

Poisonous Symptoms After Thirty Grains of Salicylate of Soda.

Dr. Jones, after administration of thirty grains of sodium salicylate observed very distressing complex of symptoms consisting of a feeling of anxiousness about the heart, great weakness, so that the patient thought he was about to die; this was preceded by a stage of excitement. This condition lasted four hours when the patient fell asleep. The following day when she awoke she was well.—*Glasgow Med. Journ.*, Jan., 1904.—Quoted from *Hahnemannian Monthly*, April, 1904.

The Late Dr. Mahendra Lal Sircar.

The monthly Homœopathic Review for May 1904 contains an obituary notice of the late Dr. Mahendra Lal Sircar, the revered editor of this Journal. In it the editors expressed a kind wish that the journal "will be kept up and continued at the high level it consistently maintained in the hands of our deceased brother." We are grateful for this kind wish. His followers are trying to keep up the journal. They are attempting to maintain the high level, but how far they will be successful, remains with the public to judge.

We are also grateful to the Indian Homœopathic Review for taking a kind notice of the death of Dr. Sircar. We only wish that our united endeavours will be able to maintain the prestige of homœopathy in India which was so devotedly created and zealously maintained by our revered predecessor.

Fruit Diet.

There are certain extracts in the April number of the *Homœopathic World*, showing the efficacy of fruit diet in certain diseases, such as diabetes, Bright's disease, nightmare and excessive nervousness of invalid children and the gastro-intestinal disorders. In diabetes,

sugar of fruits can, it is said, be taken to the amount of three ounces daily without increasing the output of sugar. Fruits also furnish the much-needed carbonaceous elements without increasing the sugar. They diminish the gastro-intestinal decomposition, and so take work from the kidneys, giving them better opportunities to store up sugar. By a fruit diet the ptomaines are diminished in Bright's disease, and more acid and water are directed towards flushing the kidneys. Fruits are also said to increase the alkalinity of the blood, and to favour the oxidation of sugar. Enough has been said to show the importance of the subject. All physicians ought now to pay their best attention to the effects of fruit diet both in health and disease, and find out the action of each kind of fruit in individual cases and diseases. This is the more incumbent on the Indian Medical Officers, who received their dietetic lessons from Professors like Parkes and deChaumont.

Primary Seat of Tuberculosis.

The British Medical Journal of 16th April contains observation of Dr. Symes and Fisher of Bristol Hospitals. They have come to the following conclusion after a post mortem of five hundred cases :

To sum up, if we take local foci of disease as evidence of primary disease in the neighbourhood of the foci, our statistics tend to show that during the first twelve years of life tuberculous infection by the air passages is four times as common as by the alimentary canal. Our statistics also seem to show that the comparative frequency of infection through the alimentary canal during the second twelve years is equally common. Deaths in hospitals above the age of 12 years can hardly, however, be taken to represent the average causation of death from varieties of tuberculosis for the whole population above that age, because cases of tuberculosis of the lungs are more chronic than at an earlier period of life, and are not usually admitted to ordinary hospitals.

In spite of the exclusion of chronic pulmonary troubles from hospitals, the proportion of abdominal to thoracic tuberculosis in the institutions from which the reports were taken was very small after the age of 24.

As far as we are aware, in India the primary seat is mostly in the lungs and the greatest susceptible age is from the sixteenth to the twenty-fifth year.

Poisoning by Potato Salad.

Dr. Dieudonné, of Wuerzburg, relates that in August, 1903, about one hundred and fifty persons were taken ill after having eaten of potato salad. They suffered from headache, vertigo, nausea, violent and repeated vomiting, with more or less collapse; many had cramps of the extremities, especially of the calves of the legs. Temperature normal, pulse weak and slightly quickened; the pupils reacted sluggishly to light, but were neither dilated nor narrowed. The majority were better in a few hours, though some felt weak even the next day. Metallic poisons and solanin were excluded, while bacteriological examination of the food revealed the presence of the bacillus proteus vulgaris. These germs were fatal to animals, and experiments yielded positive results. The weather had been hot, the potatoes had been boiled the day before, cut up and left over night in baskets to be made into salad the following day. Possibly, the proteus germs had been transferred from the hands of the persons who had peeled the potatoes. He thinks that some of these cases, where a number of persons are poisoned by potatoes, are not solanin, but proteus poisoning.—*Berliner Klinische Wochenschrift*, No. 1, 1904.—*Hahnemannian Monthly*, April, 1904.

Unusual Legislation.

The *Hahnemannian Monthly* of May, contains the following account of an unusual procedure that has been adopted in the Board of Health in Philadelphia, U. S. America.

"The recent outbreaks of smallpox were caused by exposure to the contagion through the ignorance of physicians in not recognizing the disease. The officials of the Health Department are indignant at the results of these blunders. They believe that physicians who make them should be disqualified as practitioners. The present law in such cases is deemed inadequate, as it only provides a fine. Director Martin is preparing an amendment to the present health laws, which it is understood, will contain a provision that when a physician fails to properly diagnose a contagious disease the offender shall not be allowed to practice medicine until after he shall be examined by the State Medical Board to determine his professional fitness.

It must be said that the above procedure is an extraordinary interference with the duties of the medical profession. For the better education of the medical practitioners of Philadelphia, notifications containing detailed symptoms of smallpox should be circulated by the

Board of Health. We hope that will prevent the rupture between the Board and the profession of the City."

Plague in Egypt and the Soudan.

The following observation occurs in the *British Medical Journal*, April 16th, from Sir Horec Pinching the chief of the medical staff in those countries :

The incidence of the disease has followed the same course as that observed in the previous years, namely, the disease became more acute during the early spring months, and ceased during the late autumn. It is interesting to note that the period in Egypt when most cases of the disease appear corresponds with the period when rats are breeding. Almost invariably in the houses where cases occur, and in those adjoining, dead and dying rats are found. For this reason a general disinfection is made not only in the affected house, but in all the houses adjoining. After such a thorough disinfection it is rare that other cases occur.

During 1902 there was a marked increase in the number of cases as compared with 1901. It is therefore very satisfactory to note the decrease which has occurred during 1903. Without doubt the strict supervision of infected districts and the immediate measures taken have to a great extent prevented plague from assuming serious proportions in Egypt. In my opinion these measures must be continued for a number of years to come before we shall be able to consider Egypt safe from a serious epidemic of plague.

For some years past experience has shown that in a country where sanitary police measure and general sanitation are in an advanced state of perfection, a few cases of plague, recognized at once as such and dealt with on simple practical lines, need cause no great alarm as to the disease spreading and assuming a grave epidemic form as it has done in India. Plague, without doubt, like cholera, is a disease which spreads with alarming rapidity among a population devoid of all ideas of hygiene, and amongst which no rational measures are taken to deal with the early cases. It behoves the Government, therefore, to take all measures possible to keep so serious a disease as plague within reasonable limits. This can only be done by constant supervision, and by energetic measures with regard to the discovery of first cases, disinfection, and isolation of the sick.

Climatic Bubo.

The new word had been coined to specialise other buboes than those originated from syphilis, plague, etc. At present, attempt is made to include them within plague buboes. The *British Medical Journal* of April 23, contains the following discussion at a meeting of the Pathological Society of London, held on the 19th April.

Mr. Cantlie and Professor R. T. Hewlett read a joint communication on climatic bubo. Mr. Cantlie saw the disease, commonly known by the above name, in 1893 in Hong Kong. Many cases occurred, and about a year afterwards plague broke out. The real interest of the subject turned upon the relation of the disease to plague. Climatic bubo was a specific disease accompanied with a high temperature and lasting three or four weeks. The gland affected suppurated, or suppuration occurred around it, and required excision. The pus examined had hitherto proved sterile. Mr. Cantlie named the condition *pestis minor*. The case in which the present bacteriological examination was made concerned a gentleman in whom a bubo formed in the groin; the periglandular exudation proved sterile, but from the excised gland cultures were made. Professor Hewlett reported that three bacteria were grown from the gland—*staphylococcus pyogenes albus*, *staphylococcus cerbus albus*, and a minute bacillus staining by Gram's method, and curdling milk. In these respects the bacillus differed from that of plague; it was non-pathogenic to guinea-pigs and mice. As Dr. Simpson had pointed out to the speaker, it corresponded with a micro-organism isolated by Kitasato in 1898 from a case of plague.

Dr. Simpson remarked that the bacillus of Kitasato was not infrequently seen in Capetown, and was associated with what was clinically diagnosed as plague. It was significant that climatic bubo was found in the regions affected with plague; it seemed to bridge over the true epidemic.

Dr. A. E. Wright could not help thinking that a disease caused by such a bacillus as that grown by Professor Hewlett could not be called plague: the two micro-organisms were quite distinct. He observed that the glandular disease due to the true plague bacillus assumed all grades of severity; the glands might not suppurate at all, and the disease would, under such circumstances, be quite local and practically incapable of spreading to other individuals.

Dr. D'Este Emery pointed out that the bacillus in question bore some resemblance to the bacillus of Sabouraud and, might possibly be this, that is, it might have reached the glands in some way from the skin.

The Chairman remarked that sections of such an excised gland would be particularly useful in settling whether the bacillus lay in the tissue; he had seen a similar microbe in connexion with the skin. Kitasato appeared to have modified his descriptions, and it was not easy to identify the micro-organisms under discussion. He did not think the bacillus of Kitasato was a true plague bacillus.

Radium and Homœopathy.

In the *Revue Homœopathique Française*, February, 1904, Dr. F. Cartier of Paris says that Mr. Curie, the discoverer of radium, is the son and also the grandson of homœopathic physicians and asks the pertinent question, Will Radium advance the cause of Homœopathy?

The following account of the family is taken from the *Homœopathic Recorder* of April 1904.:

Grandfather Curie, a French physician originally from Alsatia, after having practised for sometime in France, was attracted to England about the time that Homœopathy began to spread. He continued to live in England, devoting his care to a large circle of patients, owing to which he accumulated quite a fair fortune.

His son, the Dr. Curie, of the second generation, the father of the present distinguished savant, remained in France, where he also practised Homœopathy. He was established in the Quartier St. Germain, but not having the same aptness as the grandfather, and having more taste for scientific researches than for medical practice, after some years of practice he accepted the post of Inspector of Nurses in the Department de la Seine, which post was offered to him by one of his political friends, and which he still holds.

Dr. Curie, the father of the savant, is still living at Fontenay-aux-Roses, near Paris, and is about sixty-five years of age; his name is well known to homœopaths for he made experiments with *Bryonia*, *Chloride of Gold*, and especially with *Drosera*. About the year 1868 the *Art Medical* and the *British Journal of the Homœopathic Society* published the researches of Dr. Curie concerning *Drosera*. The father of the discoverer of radium had poisoned some cats with *Drosera* and had demonstrated the existence of an inflammation on the pleural surface of both the lungs. At the time it was thought that consumption might be cured with *Drosera* but its use in this malady has proved only palliative.

As to the celebrated chemist and his no less remarkable spouse, as mentioned above, neither one is occupied with medical studies, they being solely chemists or physicists.

The family lives with the father at Fontenay-aux-Roses, and Mr. and Mrs. Curie, who are ardently devoted to the wheel, may frequently be seen cycling from their country home to their laboratories. This distinguished lady comes from Varsovia, in Poland, and made the acquaintance of Mr. Curie during her studies of chemistry in Paris. They were attracted towards each other and married, forming thus a new Franco-Russian alliance.

We feel a great satisfaction to mention that the eminent man is a production of science and homœopathy. The Franco-Russian alliance is another noticeable feature. As for the use of radium in homœopathy, it will not be safe to seek the unreasonable method of empiricism. The positive friction would be from the pathogenetic use of the metal, according to the modern and advanced science of homœopathy, and the application of those results in chemical medicine.

CLINICAL RECORD.

Indian.

A CASE OF BUBONIC PLAGUE.

BY HEM CHANDRA RAY CHAUDHURI, L.M.S.

Babu—————'s son aged 6 years, living in Creek Row, was attacked by fever on the 24th. March, 1904. The next day I was called to treat the boy. He had no thirst. Temp. 101.4 F. I gave Gels. 1 dec.

On the 26th, the report was that the fever had left him. Gels. 1 dec. was continued.

27th. The fever reappeared at midnight and he was suffering from it in the morning. Bell. 30 Cent.

28th. The fever lessened but did not leave him. Placebo.

29th. During the night, a gland on the right side of the neck became suddenly enlarged. Merc. s. 12 dec.

30th. The fever lessened as well as the gland disappeared. Merc. s. 12. dec.

31st. During the night a gland on the left side of the neck was seen to be swollen. The temperature in the morning was 100. Merc. s. 12 dec. In the evening the fever rose to 101.2.

1st April. Morning, temperature 100. Bell. 6 dec. Evening, 102.6.

2nd. Morning 101. Badiaga 3 dec. At noon, 102.6. Evening 99.

3rd. Morning 96. Badiaga 3 dec. continued. The pain in the gland much less than before.

4th. The fever reappeared without any traceable cause. Badiaga 3 dec. continued. Temp. 102.

5th. No fever. Badiaga 3 dec.

6th. Fever again. It seemed to be of an intermittent irregular character, without any detectible characteristic symptom. Badiaga 3 dec.

7th. No fever. Quinine pills of two grains a dose, four doses.

8th. Fever again. No thirst. Gels. 1 dec. The enlarged gland has considerably lessened.

9th. No fever. Quinine pills, as above.

10th. No fever. Quinine pills.

11th. No fever. Quinine pills.

18th: Reported that there was no more fever. The last vestige of the enlarged gland has not disappeared. Merc. sol. 12 dec.

22nd. The gland has entirely subsided.

Remarks.

The interesting features in this case are, 1. The appearance of the enlarged gland after the disappearance of another. 2. The intermittent character of the disease. 3. The points of difference with a climatic bubo.

1. I have often observed the appearance of one enlarged gland after the subsidence of another. In fact, this character is to me an almost sure sign of plague. The first disappeared very soon after its enlargement. It was not so with the second which was of an intractable nature, proving the species of the disease.

2. The intermittent nature of the fever is another noticeable feature, presenting a similarity with malaria. The appearance and persistence of the enlarged gland during the intermittent fever shews that it was not malaria. Though quinine could check the fever, yet it does not prove that it was of a malarious type. Quinine has proved effective in mild cases of plague. I do not agree with those homœopathic practitioners who object to the use of quinine in fevers. All septic fevers allow its use when they assume an irregular character. It must be said that homœopathic medicines are not always the favoured ground of attenuations.

3. The confusion of the climatic bubo with that originated by plague may occur in mild cases of the disease. In this case the first enlarged gland may be said to be of the climatic species. The second does not allow of such an assumption for its intractable character and its association with the protracted fever though of an intermittent type. Badiaga produced sufficient action on the fever and the gland, but it was unequal to produce their total disappearance. Last of all, I am bound to remark that though it was a mild case of plague yet it was instructive for various reasons.

Foreign.

DISEASES OF THE PANCREAS.

By DUDLEY D'A. WAIGHT, F.R.C.S., ENG.

1. PANCREATIC CYST.

G. R., aged 39, carpenter. Admitted into hospital February 25, 1903. The following is an abstract from very full notes made by Dr. Granville Hey.

Nothing of note in family history. About five years ago patient noticed that his abdomen was swelling, especially in the lower part. By September, 1901, the swelling caused inconvenience, and œdema of legs occurred, but disappeared after a few day's rest in bed. He was under a physician at the time who diagnosed dropsy and said that tapping of the abdomen was necessary. This was done and 460 ozs. of dark fluid were drawn off. This fluid was found to contain blood debris and cholesterine crystals. After this the patient was much relieved and was able, after a rest, to work for fourteen weeks, then the swelling began to return and incapacitated him. At this stage he sought admission to the hospital.

On admission the patient appeared thin and pinched, with a dusky tint of skin. Tongue fairly clean, appetite poor, bowels rather constipated, temperature 98°F. He complained of much breathlessness on exertion and inability to do any work because of the great distension of the abdomen, which bulged out the ribs on both sides up to the level of the ensiform cartilage, which also was pushed forward somewhat.

There was a fluid impulse everywhere over abdomen and in both hypochondria, and the percussion note was dull all over except slight resonance in the posterior part of left flank, which area of resonance did not move with a change of position of the body. The fæces were examined and no excess of fat was discovered.

A consultation was held, and it was decided that exploration of the abdomen should be carried out; this was done under gas and ether anæsthesia on March 13. A 7-in. incision was made above and below umbilicus. On dissecting through abdominal wall a cyst was come down on. The wall of this cyst was adherent to the abdominal wall so firmly that after a brief attempt to separate it the effort was abandoned. The cyst was then opened and 450 ozs. (22½ pints) of dark brown and somewhat iridescent fluid, containing dark, putty-like masses of apparently necrotic tissue, were removed.

The cavity of the cyst was washed out with saline solution and explored manually. The hand passed freely down into the pelvis and up under the diaphragm and ribs, but no viscera could be felt, neither could any trace of them be seen.

As the cyst did not collapse to any great extent after it was emptied it was thought advisable to drain posteriorly, which was accomplished by pressing the cyst against the muscular wall of the right loin and dissecting down upon it here. A large tube was then put in at this spot and secured by means of a stitch, a portion of the cyst wall having been sutured to the muscles around. The anterior opening of the cyst was closed by a continuous silk suture and the abdominal walls united over this.

The after-history was mostly uneventful. The cyst drained well posteriorly for some time and a small localised suppuration occurred in the abdominal wound, and some brownish fluid came away from this. The patient left the hospital six weeks after operation with the posterior wound nearly closed and a slight brownish discharge from the abdominal wound. Six months later I saw the patient again. He was looking very well and had gained much flesh, and the cyst had not refilled. The posterior wound had been closed for some months, but there was an occasional slight brownish discharge from a small sinus in the front of the abdomen.

The following interesting report of the chemical examination of the fluid removed was subsequently made by Dr. Watkins, the hospital pathologist:—

“Specimen of fluid removed gives an alkaline reaction. Microscopic examination shows the presence of great quantities of red and a few white blood cells and also a great amount of cholesterine crystals, no cells resembling salivary cells, and no hooklets were found.

“When treated with nitric acid no bile reaction was obtained.

“When mixed with an equal amount of olive oil and shaken, an emulsion was formed and the oil only partially separated after twelve hours.

“When mixed with a solution of boiled starch and placed in an incubator at 38° C. it ceased to give the iodine reaction of starch.

after half an hour, but no reaction for dextrose or maltose was obtained.

"When mixed in the solution of egg albumen and 1 per cent. of sod. carb. and kept at a temperature of 38° C. for half an hour the reaction for albumose was obtained, and on treating the coagulated white of egg in the same way for twelve hours it was found partially digested."

2. CANCER OF THE PANCREAS.

The next case was one apparently of cancer of the pancreas invading the omentum. The notes were taken by Mr. Neatby, the house surgeon, and, like all his notes, are so sprinkled with the proverbial "Attic salt" that I will not attempt to transcribe them into more prosaic language, but will give them in his own words.

The patient, Mrs. B., aged 55 years, has for the last four years suffered from indigestion. She had gall-stone colic at 20. It lasted a fortnight, but she was not jaundiced, nor does she remember passing a stone. She had pleurisy with effusion at 35 years of age. About Christmas last, patient thought something was forming and went to see a doctor, who whispered "peace, peace." The patient was not satisfied and went to Dr. MacNish, who sent her to the hospital. She had attacks of vomiting and great pain in both hypochondria, chiefly in the right.

Examination showed a hard, resisting tumour in the gall-bladder region reaching down to a finger's breadth below the umbilicus. It was very tender on pressure. The abdomen was very resistant.

On July 26 a consultation was held and it was agreed by all that patient was suffering from enlarged gall-bladder, although opinions differed as to the enlargement, one believing that the gall-bladder was inflamed and contained stones, and another hinting darkly at malignant disease.

July 31.—One more of those lessons in humility which are vouchsafed so prodigally to surgeons (especially *abdominal* surgeons) to profit withal! When Mrs. B. came on to the table and was fairly under the anæsthetic, it was plain almost to the eye that the tumour was not connected with the gall-bladder.

To the hand the tumour was about the size and of the consistency of the foetal head, and could be pushed from one side of the belly to the other with ease. It was at once conjectured to be a malignant growth. An incision was made in the middle line, and the dismial conjecture was confirmed. The stomach, pylorus and duodenum were free, but the posterior layer of the mesentery was involved in a cancerous mass which, so far as the deeply exploring finger could trace it, originated with the pancreas. Nothing, of course, could be done, and the wound was sewn up and the patient put back to bed.

3. CANCER OF PANCREAS.

Case 2.—Annie L., aged 22 years, a pale, anæmic and much wasted young woman, with a very bad family history of cancer, her mother and father having both died of it, was in the hospital in 1896 under Dr. Clarke's care for constant gastric discomfort and vomiting of food.

There was much flatulence and distension of the stomach in which wind and water could be heard gurgling. A tender spot was present in the epigastrium, and dulness to percussion over the gall-bladder region for 2 inches below the costal margin. There was fairly constant diarrhoea, the motions being usually watery and green; the temperature would often rise without apparent cause to 101° F.

The patient gave a history of occasional transient attacks of jaundice during the past year. At this period of the case Dr. Clarke was away from the hospital and the patient was put under the care of Dr. MacNish who, finding that the symptoms grew worse, asked me to see the case with a view to surgical interference. The result of this was that it was decided to explore the abdomen.

The operation was carried out under rather unfavourable circumstances. The patient was in a very weak state and the pulse was very feeble. The abdomen was opened and the pylorus reached, and it was found fixed deeply to the underlying structures. The stomach was brought into the wound and incised, and the fingers introduced and the pylorus explored.

This opening was found much constricted and infiltrated by a nodular growth which nearly encircled the gut, but was most marked posteriorly. The pylorus only admitted the top of the finger which was used to dilate it until the whole of the middle and the top of the index fingers could be introduced into the strictured canal. Further dilatation appeared likely to lead to laceration, so the opening in the stomach was closed. No attempt was made to deal further with the disease as the patient's state would not permit of a more prolonged operation.

The patient lived ten weeks after the operation and never vomited once during that time, except twice moderately after the operation. She gradually sank from exhaustion owing to profuse diarrhoea and hectic temperature, which the *post mortem* showed was due to a nodule of secondary new growth in the liver which had broken down and suppurated.

The primary growth was evidently in the pancreas, which gland was nearly entirely replaced by new growths.

4. ACUTE SUPPURATIVE PANCREATITIS.

Eliza A., a widow, aged 39 years, had undergone the operation for radical cure of a large umbilical hernia two months previous to coming under treatment. On August 16, 1896, complained of severe pain at the "pit of the stomach," accompanied by vomiting. She was seen by Dr. Neatby, who sent her into the hospital and she ~~was~~ admitted on August 18. The bowels had not acted for two days.

It was found on her admission that there was slight return of the umbilical hernia, but it was easily reducible, and its reduction in no way ameliorated the symptoms. The whole abdomen was distended and tender over the epigastrium. Vomiting of a brown non-stercoraceous fluid frequently occurred.

The same evening, assisted by Dr. Neatby, I performed abdominal section. The abdominal cavity contained some brownish, inodorous •

fluid, which was evacuated, and a portion of the small intestine lying about the umbilical region was congested, but nothing else was found. The abdomen was accordingly closed up.

The vomiting ceased after the operation, and all appeared to be doing well for some days, the bowels acting naturally, but the temperature showed a nightly rise to 101° or 102° F.

On the twelfth day after the operation pain occurred in the left loin, worse on taking a deep breath. On the fourteenth day a rigor occurred, the temperature going to 105°, and this was followed by attacks of vomiting. Meanwhile the lumbar pain increased in severity and extent, passing to the left hypochondrium and then to the epigastrium, and there was great tenderness of these parts. The urine was very dark in colour, but contained neither bile, blood, nor albumen. The quantity was below normal, only 14·ozs. in twenty-four hours, containing 25 grammes of urea.

Six days after the rigor, *i.e.*, twenty days after the operation and twenty-two from the onset of the symptoms, a round swelling could be felt in the left kidney region, which was excessively tender. This was cut down upon under an anæsthetic and a quantity of peculiar putty-like material was evacuated, leaving behind a large cavity containing several loculi similar to the dilated calices of a tuberculous kidney. This cavity was drained.

The operation caused no improvement in the patient's condition and she died exhausted on the following day.

The following notes are from the *post-mortem* register made by Dr. Hervey Badman :—

“Subcutaneous fat excessively developed. Much fatty overgrowth of heart. Hypostatic congestion of both lung bases. Abdomen somewhat distended. In the fat of the mesentery and in the retroperitoneal fat, especially in the lumbar region, are numerous opaque, yellowish-white masses from the size of a millet seed to that of a bean, which when cut into were found to be soft and caseous (so-called ‘fat necrosis’).

“Behind stomach and transverse colon a resistant swelling which on exposure proved to be the pancreas converted in great part into an abscess cavity containing a quantity of yellowish fluid pus and masses of caseous and sloughing material. This had a large retroperitoneal extension behind the upper part of the left kidney and splenic flexure of the colon, which was the part encountered when the abscess in the loin was opened.

“The stomach presented a well-marked petechial condition of the mucous membrane over a considerable area of the posterior part of the fundus, the central part of this area forming a part of the cavity. The liver was a fatty and the gall-bladder contained some small gall-stones.”

The latter point is of interest, for it is now recognised that in a very large number of cases pancreatitis is secondary to inflammatory affections of the biliary channels which are in their turn so favourable to the formation of gall-stones.—*Journal of the British Homœopathic Society*, April, 1904.

Cleanings from Contemporary Literature.

THE HISTOLOGY OF MENSTRUATION.

By THEODORE J. GRAMM, M.D., PHILADELPHIA.

There is no other structure of the human body which experiences such vicissitudes as affect the endometrium from birth to old age. Developed as it is from the cylindrical and round cells of the ducts of Muller, whose coalescence has formed the uterus itself, we find it at birth to be composed of cells of foetal type. They lie closely approximated, are small, with irregular nuclei. The epithelial covering is composed of cylindrical cells lying very closely together, having elongated, staff-like nuclei. The so-called uterine glands are quite few in number, and a cross-section of the uterus, which at birth has not acquired the antero-posterior flattening characteristic of later years, but is more cylindrical, shows that there are from six to eight recesses or folds which may be viewed as the beginning of later gland formation.

From this time on the changes which, during the course of an ordinary lifetime, are likely to be presented by this membrane are numerous and surprisingly diverse. For about fifteen years the endometrium is passing through a formative stage, during which it is acquiring the physical conformation required for the performance of its function after the period of puberty is reached, and from this simple structure as seen at birth, it has become histologically more complex and interesting. It now appears as a membranous structure, whose stratum proprium cells are much larger, lying more loosely within a delicate fibrillated network of interglandular tissue. The nuclei of these stratum proprium cells are round, but mostly oval, and quite large. Some lymphocytes are scattered among these cells. The cellular endometrial lining rests upon the muscular structure of the uterus. The endometrium is richly supplied with small blood-vessels, which are mostly situated in its base and not far from the muscular layer, and from them there are abundant offshoots of capillaries which traverse the endometrium up to its surface epithelium in every direction, and particularly at the sides of the uterine glands. They may be recognized by the fusiform shape of the nuclei in the endometrium. Lymphatic channels are also abundant. My observations have not been successful in verifying the description of Boldt (Tenth International Congress at Berlin), who has reported seeing endometrium traversed by unstriped muscular tissue especially about the glands, and whose function was believed to be to aid the discharge of the gland secretion. These fusiform cells appear to me to belong to the vascular channels supplying the glands and other cells of the endometrium.

After puberty the glands of the endometrium have greatly multiplied, so that now it would be unusual to obtain a microscopic field in which they are not present. These glands are composed of reduplications of the surface epithelium, and extend from the surface of the endometrium down to its base, and they sometimes penetrate the muscular tissue. For a

variable distance from the surface they traverse along almost straight lines, but deeper down they become convoluted and tortuous, so that here in the section their transverse and oblique diameters are presented in the microscopic field. They continue down to the muscular tissue of the uterus, where their termination appears branched. The glands are lined throughout by cylindrical epithelium, and this is continuous with the same sort of epithelium covering the surface of the endometrium. Close inspection will reveal the interesting fact that the nuclei of the glandular epithelium are not by any means regular in size nor identical in shape. Some of them are rounded, the majority, however, being oval; some quite irregular shapes are seen, and there is considerable variation in their power of taking the stain. Although there is this lack of uniformity in the cells of the glands, there is sufficient constancy in the variations to suggest the thought, while certainly undergoing certain processes of development and retrograde change, whether they do not also possess a difference in function.

The condition of splendid maturity characterizing the endometrium during the period of possible procreation exists in a somewhat variable degree from puberty to the climaxis. But at the time of the climaxis and thereafter the tendency to senile atrophic change, which is apparent in the entire generative sphere, is also observable in the endometrium; its glands are much smaller and narrower, the stratum proprium is not so thick and is more fibrous, its cells smaller; while the surface epithelium is not nearly so high, neither is the general surface so irregular or wavy.

The lining membrane of the uterus is commonly spoken of as a mucous membrane, but even from the brief description which has preceded, it becomes manifest that there are some distinct differences from mucous membrane as commonly seen in other parts of the body, and notably that the endometrium does not possess a submucosa. These differences have led some authors to maintain that the endometrium is not to be regarded as a mucous membrane, but as a glandular organ.

In this brief description of the minute anatomy of the endometrium when in a comparatively quiescent state, we have not at all touched upon the remarkable changes which it is undergoing in regular cyclic rotation during the twenty-eight days from one catamenial molimen to the other. These changes have been the subject of many elaborate and painstaking microscopical investigations which cannot fail to excite our admiration.

The difficulties which attend the study of the minute changes in the endometrium during menstruation are suggested by the divergent views of the rather numerous group of observers who have given close attention to the subject. The material employed in these examinations was the entire uterus removed shortly after death, the uterus removed by operation, and fragments of endometrium removed by the curette, note being made of the exact time of obtaining the same with reference to the day of menstruation or of the intermenstrual period. It must become apparent on reflection that the material obtained under such widely varying conditions must present appearances and suggest conclusions not uniform.

Thus the observers whose material was furnished by the cadaver have almost uniformly recorded the extensive destruction during menstruation of the endometrial epithelium and of portions of the endometrium itself; whereas this observation has not been confirmed when the endometrium, either in a fragmentary condition or in its entirety, was obtained by surgical operation. The objection, apparently valid, has been made that the destruction of the surface epithelium was induced by cadaveric changes or was brought about as one of the associated conditions of the serious diseases from which the patients died. Fatty degeneration of the cells has by some authors been regarded as primary and the exit of blood as the secondary condition while others regard the processes as reversed. There is also some difference of opinion respecting the regeneration of the endometrium.

It is not desirable at present to review in detail the painstaking observations upon which these diverse views are based. But of late years some investigations have been made which seem to indicate that considerable advance has been made toward a correct appreciation of the histological changes taking place during menstruation.

Of the later works which have augmented our knowledge of the minute processes involved in menstruation is that of Mandl (*Arch. f. Gyn.*, Bd. 52, H. 3). He examined four uteri from cases operated during menstruation, in which the endometrium was believed not to be materially influenced by the conditions in the adnexa. He found that while the epithelial layer was in no case entirely destroyed, neither entirely retained, that there were always portions of varying extent in which the epithelium showed deficiencies in its continuity varying from two to twenty cells in extent, and through which the blood collected beneath the epithelium obtained exit and flowed into the cavity of the uterus. In places also in the extravasated blood epithelial cells, still adherent to each other in a row, were seen which doubtless belong to a neighboring defect in the surface. The extent of these deficiencies varied with the amount of the hæmorrhage. In some preparations the epithelium was only elevated by blood extravasations beneath them, and serial sections were then able to show where the break in the surface took place. He could not observe a diapedesis of red blood cells between the epithelial cells, but leucocyte did thus pass through and simulated mitoses. It is possible that the diapedesis of leucocytes may open a path for the exit of the red corpuscles. The abovementioned breaks in the continuity of the epithelium are repaired by means of mitotic proliferation of the epithelial cells and of the glandular epithelium. This regeneration is already present during menstruation, and takes place by indirect division of the cells of the epithelium and of the uterine glands. Before menstruation there is a congestion and a loosening up of the cells by the fluid elements of the blood even before the advent of red blood-corpuscles. Somewhat later these collections of blood appear as above mentioned. All of the bloodvessels participate in this increased vascularity.

Below the region of the internal os the cells take on an increased ability to secrete mucus, and this is true also of the gland tubules in the parts nearest their openings. This condition is evidently brought about by the stimulating effect of the processes of menstruation, and has been confirmed by other observers. It explains the mucous discharge before and after menstruation commonly observed in healthy women.

Another valuable contribution is an article on the physiology of menstruation by Westphalen (*Arch. f. Gyn.*, Bd. 52, H. 1). His material was obtained mostly by curettement, and also from freshly extirpated uteri, and while quite fresh was at once fixed in Flemming's solution. In this manner many fragments were examined from fifty cases, and the data obtained were accurately tabulated. His observations are in accord with Moericke's, and have been confirmed by Gebhard. From these several microscopical studies the histology of menstruation may, according to the last named author, be described as follows :

The entire menstrual cycle, including the time from one catamenial period to the other, may be divided into three stages comprising that of the premenstrual congestion, the stage of menstrual hæmorrhage, and the stage of post-menstrual regeneration.

The stage of premenstrual congestion begins about ten days prior to the hæmorrhage, and consists in a loosening of the upper third of the endometrium by serous and later sanguineous exudation, which separates the cells. According to Gebhard (*Vsitt's Handbuch*, 3-1-11), this exudation gradually increases in extent and amount forming localized extravasations at the points of least resistance in the vessels, and ultimately reaches as high as the surface epithelium, under which it forms collections of blood to which he has referred as subepithelial hæmatomata, and by reason of these collections the surface becomes undulating. A distention also of the vessels of the endometrium takes place, beginning deeply and gradually approaching the surface. The uterine glands also experience an increase in size and become dilated and tortuous, the lining cells become much larger, and their nuclei rise above the middle of the cells. Special staining has shown that there is an increased elaboration of mucus, and the gland lumina are filled with mucus. Cell regeneration during this stage is at a minimum.

During the stage of menstrual bleeding the blood collected under the epithelial layer, as above mentioned, finds exit in part by the corpuscles passing between the cells of the intact epithelium, though the amount of bleeding by this process is but scanty. By far the larger amount of the blood reaches the uterine cavity by a separation of the epithelial covering of the hæmatomata in the upper layers of the endometrium, whereby a much more easy exit is provided for the free blood collected in the tissues, and for that remaining in the turgid capillaries and small vessels. Much of the epithelium raised by the subjacent collections of blood again falls back into or near its original place, although it does happen that masses of cells unable again to accomplish this become separated and appear as

cellular fragments in the menstrual discharge. Maudl has particularly studied this process. Mitotic cell proliferation already appears during menstruation.

The careful work of the authors just cited, who have established the facts mentioned, shows how fallacious was the teaching of former years that the endometrium was cast off at each menstrual period, or there was at least supposed to be a more or less complete disquamation of the surface epithelium. This belief found some confirmation in the investigations of a long list of observers who worked mainly with material obtained after a varying number of hours subsequent to death, or from patients affected with serious systemic diseases, many of which have since been shown to exert a destructive or inflammatory action upon the endometrium. The description above presented is based upon the results of observations of material obtained by curettement and from the uterus removed by operation from which fragments were forthwith preserved in fluids known to best fix cell changes.

Following this stage in the menstrual cycle is the period of post-menstrual involution and regeneration, and its duration is from the cessation of the bleeding until after the eighteenth day subsequent to the flow. As suggested, it is the time during which there is recovery from the pronounced histological alterations which distinguish the preceding stage, and during which a regeneration takes place. The more or less extensive areas of epithelial cells, elevated by blood extravasations beneath them, fall back upon or near their former location, and become adherent there. The blood, both subepithelial and lying deeper down, which was not liberated during the hæmorrhagic stage is absorbed and at times marks its former location by deposits of pigment. The glands again contain mucus.

This stage is characterized by mitotic proliferation of cells. The mitoses are numerous in the epithelial covering and in the gland epithelium, in the fusiform cells surrounding the glands, and especially in the stratum proprium cells. One of my own slides, made while studying this subject, shows eight of these interesting cell changes not far removed from each other. Twenty-four hours after menstruation Westphalen found in two cases only single mitoses in the gland and superficial epithelium near the gland openings, while in two other cases there were many mitoses in the upper parts of all glands, as well as single ones in the upper layers of the stroma and in the superficial capillaries. From the sixth to the eighteenth day there were numerous mitoses constantly present. He says that the regeneration seems to reach its highest point of activity about the fourteenth or fifteenth day after the beginning of menstruation. From the middle of the third week onward there is noticed a marked diminution of the number of karyokinetic figures.

Perhaps a word should be said in reference to fatty degeneration which has so frequently been mentioned in connection with the minute processes of menstruation. The observations of Westphalen are that fat in the form

of diffuse fine-grained infiltration of the protoplasm of the epithelial and stroma cells can be found in all phases of menstruation and of the interval ; but in his cases there were so many individual differences that he does not know which to regard as the normal. After some description of his observations, he concludes as follows :

1. Diffuse finely granular fat infiltration is at all times present in the normal uterine mucous membrane, and hence does not bear a causal relation to the hæmorrhage.

2. The fragments of tissue cast off by the menstrual process undergo fatty degeneration.

3. At the end of menstruation there is an increased tendency to fatty metamorphosis in the upper layers of the mucous membrane ; but this does not determine the death of the cell ; the fat may be absorbed.

We may readily assent to the statement that with the results of these investigations the subject has been cleared up ; and the importance of that statement can only be appreciated when we have given some attention to a historical review of the hypotheses and erroneous views which have been passed along from one author to another for many years. The facts which have been placed within our reach by the work of the authors just reviewed appear simple enough, when available data have made possible a lucid statement of the processes involved ; they are wonderfully simple as are many of Nature's processes, but let us not forget that they too are simply wonderful, for they explain how in this unique organ, the uterus, a hæmorrhage regularly recurring is physiological, whereas a similar hæmorrhage from any other organ of the human body would be manifestly pathological.—*Hahnemannian Monthly*, April, 1904.

THE PROPHYLAXIS AND TREATMENT OF CARDIAC DEBILITY IN ADVANCING MIDDLE-LIFE.

BY HERBERT NANKIVELL, M.D.,

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GENTLEMEN,—The first question for our discussion this afternoon is, What is middle-life ? It has been remarked of a famous French novelist that as years passed on his heroes of fiction always advanced in years ; they were still heroes, masters of physical prowess, excellent conversationalists, endowed with all the virtues and the more popular vices of Parisian life ; yet as time passed on, and volume after volume of successful fiction issued from the author's brain, it was noticed that these heroes were depicted as always a little older than the writer himself. It was doubtless an unconscious coincidence, but it existed—palpable alike to friend and foe. I feel, therefore, that a definition of middle-life should be made wisely, carefully, and with the earnest desire to tread on no man's toes—least of all on my own. *

I suppose that life may be wisely and scientifically divided into periods of seven years, roughly speaking. From birth to second dentition, from

second dentition to puberty, from puberty to manhood occupy three stages of seven years each, and though it is true that complete ossification does not occur till about four years after the twenty-first year, it is evident that, both scientifically and legally, adolescence may be considered as complete, when that year is attained. At forty-two the second triplet of seven years is fulfilled, and this may well represent the prime of life, wherein a man's vigour and characteristics are fully developed and in fullest function. From forty-two to sixty-three I should place the terms of middle-life, and I think from fifty-two to sixty-three the special term of advancing middle-life. Shakespeare with his inimitable pen has depicted, as in a stroke, that period of life as he knew it, and as we know it :—

“ And then the justice,

In fair round belly with good capon lined,
With eyes severe, and beard of formal cut,
Full of wise saws and modern instances.”

One sees, as with the touch of a magic wand, diminished excretion, the pleasures of the table (though there is wisdom in the capon), loss of physical energy and less love of athletics, accumulation of adipose tissue and all that it means, mental vigour in full appreciation of new ideas, undiminished receptivity, the power of terse expression, and intellectual ripeness.

Now what is indicated by the picture thus graphically portrayed for us ? I would suggest that from forty-two onwards there is a slightly increasing desire for the good things of this life, a slightly decreasing desire for athletic exercise in the majority of men. That is the crucial age when a man adopts (it may be quite gradually) one set of habits as opposed to another set of habits. Things which become distinctly matters of trouble or exertion get dropped out of the daily habit of life ; things which rather add to the pleasure of the moment, or of the half-hour, or of the afternoon become gradually adopted. The active man is less determined about his activity, the sedentary man a little more determined about his arm-chair, and so on.

This change in the man is of course an effect of certain alterations within him, as well as around him—of a slight stiffening of his arterial system, a slight accumulation of pericardial or omental fat, a slight deterioration in the tone of his muscular fibre, coincident very likely with an increase of its bulk, quite as much as a certain diminution in the energy and go with which he commenced his career, consequent on the attainment of a competency, or at any rate, a lessening of the strain which braces a younger man to effort in order to secure for himself bread and cheese.

These slight changes of habit from year to year are generally cumulative in themselves, and they are certainly, as years go on cumulative in their effects on his system. Fat accumulates, muscular fibre deteriorates, the arterial tube stiffens more, is less adaptable to the varying flow of blood within it, may become even slightly atheromatous. Some excretory organ suffers—probably the kidney; the urine is acid and of high specific gravity.

at first, and as time goes on the organ distinctly fails in its work. The specific gravity falls, and further trouble is set up—a circulating fluid of a debased character, charged with the result of tissue change, which should be, but has not been excreted. And so more work is thrown on a weakened heart; all work that must be done is done with increased tissue-friction; nutrition generally, and specially of muscular tissue, suffers, and the superintending nervous system loses gradually some of its automatic control of organic life.

It matters really very little where the “vicious circle,” as it is well called, is entered on; as time progresses tissue after tissue and organ after organ is gradually added to the lists of its triumphs; it depends on the previous life history, and on hereditary tendencies, and it may be on the peculiar circumstances in which the man exists, to determine the first point where actual breakdown shall occur. But, as a matter of frequency, we find merely by “looking at the papers” from day to day, that sudden and so to speak, unexpected breakdowns occur very frequently in the cardiac mechanism; and they very often take the form of sudden death without pain or warning or of sudden anginas which prove fatal after two or three attacks, or of sudden collapses followed by cardiac atony which proves fatal after a few weeks or months.

Professional men and city men, active men and sedentary men, statesmen and manufacturers in large and small ways—all suffer; and the majority, I believe, of these deaths occur between fifty-six and sixty-three.

It becomes a question for consideration whether or not in this septennium (from fifty-six to sixty-three) the male sex does not pass through a similar, though less marked, constitutional perturbation as the female sex does between forty-two and forty-nine. Women certainly and frequently develop “heart” at that special time, and sometimes severely and fatally; and you will note sudden deaths of women at such age to occur with a certain amount of frequency. Generally speaking, however, they get under medical care at such time, and are steered carefully through the climacteric period. But in the case of men the variety of symptoms at such an age is much less, their intensity really of the slightest, and it may be that at a given time they only act as the last straw in the load which breaks the camel’s back. The question may be “academic” only in value, but physiologically and by all analogy there should be an element of truth in it. And cognate to this there is, I think, a certain amount of evidence that, just as each septennium in early developing life leads to newer power and fresh activities, so during the slowly drawn out retrogression of the vital power each septennium is also marked by fresh limitation and degeneration. One would not labour the point, and there are always brilliant exceptions, but a consideration of many lives I have known leads me towards these conclusions.

Now what forms of heart trouble are specially set up at this period of existence?

Taking the Shakespearian model of advancing middle-age first, one

would say that such a man might have a pretty powerful heart, but overlaid with adipose tissue—a fat heart in contradistinction to a fatty one. Probably there is no degeneration of fibre, especially in the earlier years of advancing middle-life. And besides this, there is omental or intraperitoneal fat, and there is fat overlaying the abdominal muscles in quantity. Such a man will bear nerve strain and brain-work well—probably as well as at any period of his existence. He has experience of life, he can hold himself well in hand, he does not take things too much to heart, and his condition, it may be assumed, of general prosperity and competence, combined with a good share of mental vigour, carry him safely enough over the pitfalls which surround him. His danger lies in any sudden and unlooked-for exertion, a hot political meeting, an unexpected fall in stocks, a hurried rush to the City or the Law Court, or the House of Parliament; even a too vigorous game of golf or what not else may determine a strain that tells; thereafter a heart feebleness is established and accumulates.

Or we may have to deal with a sensitive man, accustomed to sedentary pursuits, who has attained this age. He may be inclined to a thin habit of body, and possesses a muscular system weakened by non-use; he may have a sensitive nervous system, a tender conscience, a power of worry over trifles. And this condition may lead up again to establish the symptoms of a weakened or dilated heart, preceded by functional troubles, and confirmed by a dyspepsia, or an oxaluria, or a deficiency, as well as an alteration, in excretive power.

Or we may have another type in the choleric man, whose temporal arteries are more or less rigid, who has developed a too early atheroma, and whose heart, often working under strain, has been overdone and exhausted by repeated attacks of excitement and temper.

The strain of life at this time seems to lead up to a marked alteration in healthy cardiac action in many instances of these types in the ordinary run of life. And no doubt this is at the present time intensified by the occurrence of such diseases as influenza, by the increased hurry and responsibility of daily life, by the pressure of the penny post and sixpenny telegraph, the evening paper with its exciting paragraphs, to say nothing of the morning halfpenny one, the rush to the train, the hurry in the office, the strain of professional life, and the emulation of the man who feeling his powers to be somewhat on the wane, is not yet a while content to be beaten in the race, by those who are following hard after him with fewer years to bear, and advantages in education and experience which were not his.

We must, of course, add to these causes of breakdown occurrences in youth and the prime of life which now begin to tell as never before. Strain at boating and cricket, long hours of vigil, the occurrence of specific taint, indulgence in nervine tonics in excess, or in tobacco, cycling not wisely but too well, the habitual use of stimulants apart from meals, the occurrence of fevers, malarial, rheumatic, or septic, and so forth.

Time would fail to go through all the causes which in the course of years lead up to a condition of inefficiency in the heart muscle. But practically the changes I would indicate may be classed under a certain number of leading divisions :—

- (1). Gouty heart, leading up to dilatation and angina.
- (2). Fat heart, leading in its turn to fatty degeneration of the muscular tissue.
- (3). The thin, under-nourished myocardium, leading up to dilatation from comparatively slight causes.
- (4). Disturbed innervation, and disturbed muscular action and function, leading also frequently to dilatation.

Now I have been asked to speak this afternoon on the Prophylaxis and Treatment of these varieties of Cardiac Debility in advancing Middle-life. It will be evident that in the usual sense of the word there can be no prophylaxis when disease is already present—no prophylaxis in the sense in which vaccination is prophylactic to small-pox, or belladonna in small doses to scarlatina. But looking at the undoubted fact that after the age of fifty most hearts, on careful examination, will show some signs of departure from the normal in the way of size, force, or frequency of action, there is plenty of room for a prophylaxis of a definite type, a prophylaxis which may remedy changes already begun, guard against further development of trouble, check degeneration of tissue, and enable life to go on usefully, though perhaps more quietly than before, to an expected term.

A prophylaxis which prevents the development of an angina, of a syncope, of a complete breakdown in health, of a life-long invalidism, of a complete collapse in the midst of abundant mental activity and of apparently good general health, is a thing to be sought for and, if possible found.

And it is to be found under three heads : (a) Dietetic ; (b) Medicinal ; (c) Hygienic ; all adapted as they may be to the special type of constitutional trouble present.

I would strongly impress the necessity of early diagnosis of the dilated, enfeebled heart. It is often not good enough to wait till a patient complains : very often he holds his tongue about these sensations, especially cardiac ones and derived disturbances, even when he is consulting his doctor about other matters of a more trivial character. But he will very seldom refuse to have a physical examination made when suggested to him, and listen and obey the reasonable suggestions as to treatment and hygiene which would arise after the examination. And I am quite sure that the safest line is to take the patient entirely into one's confidence on the matter ; unless he is very foolish and self-willed he will obey orders, and, if he is foolish and self-willed, you have at any rate cleared your conscience in the matter. The determination of the enlarged heart is, generally speaking, an easy matter when one works with the phonendoscope, as I showed in my paper on "Cardiac Debility" at the Liverpool

Congress two and a half years ago. The determination of the relative proportion of dilatation and hypertrophy is more difficult, and often can only be got at as the treatment goes on, and the case is watched. The presence of a marked systolic murmur will always suggest a true compensating hypertrophy, but there is very likely a certain amount of dilatation left even when this has been fairly established. The enlargement due to fat must be considered with reference to omental and subcutaneous deposits, and its interference with cardiac action be estimated by the disturbance of the organ under exertion, as well as by any muffling of the sounds which may be noticed on auscultation. The most difficult matter to determine is, I believe, the amount of true fatty degeneration which has taken place; if the heart is, as is often the case, not overloaded with fat, the degeneration of muscular structure may at times be not inconsistent with moderate activity and a fairly distinct first and second sound. On the occurrence of hepatic disturbance, an influenza, or a period of nerve strain these sounds will become almost inaudible and remain so for weeks. I have an octogenarian under observation now, whom I have seen through quite six such attacks during the last ten years; in the intervals one would say there was practically very little wrong with the heart, save age and an occasional intermission. If a true fatty degeneration has invaded the myocardium, it depends entirely on its percentage whether the patient will for a time recover or not. Treatment of cardiac debility depends on the amount of uncalled-forth cardiac irritability, in the Fletcherian sense, left in the organ; and if this is less than a certain determined proportion, all treatment of a true curative nature is better left alone, and life can only be prolonged by rendering the work of the over-damaged heart as light as it can be made. But in a majority of cases the heart is open to the *plus* action of medicines and of baths, and good can be done of a fairly permanent nature.

The heart of disturbed innervation develops physical change with more or less rapidity, depending on the intensity of the disturbance. Certainly six or eight weeks of a sharp tachycardia may be the cause of considerable exhaustion and consequent dilatation of the myocardium.

In these four varieties, which I think, apart from the coarser valvular types, cover the majority of the cases we meet with in advancing middle-age, we must remember that we have to treat an individual man or woman quite as much as the heart, important as that organ is to existence. The gouty man, the obese, the neurotic, and the victim of mal-nutrition must be treated primarily and according to those general rules about which the profession differs, and about which each one of us according to his light and experience has finally to make up his own mind.

Now, first, as to dietetic measures. I need not say that whatever we direct in this matter, we must clearly see to it that the patient is not weakened by the changes which are being carried out. I do not mean that he may not temporarily feel weaker, but that stethoscopically he shall not be weaker. To state an extreme case, the introduction of "Salin-

bury diet " into the life of a plethoric gouty man addicted to pretty good living. It may be necessary and justifiable, but the experiment must be carefully watched, and I do not see that any good can come of depriving him of vegetable diet if the root vegetables are strictly excluded. Another point I would make is that even in a stout, fat man we should see to it carefully that loss of weight is not too rapid, and that time is given to the constitution to adapt itself to new circumstances. But I certainly cannot say, as a celebrated German physician is reported lately to have said to an adipose patient, that he must continue to live well, and that he would not have him a pound lighter ! And I believe nature herself gives us a lead in these matters, and by means of a beneficent glycosuria sometimes relieves a heavy man pretty rapidly of his excess of flesh. I have known certainly three or four such cases in my experience, and have noticed benefit, not only to the appearance of the man himself, but also to his cardiac functioning and general activity.

A good rule as to diet, and applicable to stout, gouty men, is to limit the breakfast to fish, bacon, and an egg, with a little toast ; the lunch to a mutton chop or a slice from the joint with green vegetables, and on no account any farinaceous puddings ; the afternoon tea to one cup and dry biscuit ; the dinner to fish and poultry or game, with green vegetables as at lunch, thin toasted bread, no butter, or pastry, or rich sauces. If these lines are carried out you will not fail to find improvement in the digestion, the weight, the muscular power, and the general *bien-etre*. And one can in this way generally avoid the troublesome Salisbury diet ; or, on the other hand, the establishment of a practically vegetarian regime.

Beer, effervescent wines, and mineral waters should be avoided. Dry ciders, dry wines of the Rhine or Moselle, or of the Bordeaux type, may be allowed in strict moderation, Sugar is better dispensed with, and saccharin, if suggested, should be laughed out of court.

Smoking has to be dealt with, and if necessary, with a firm hand. Conditions suggesting a fatty degeneration certainly forbid it in all forms ; and auginous cases should also certainly not smoke. On the other hand the irritable heart of the neurotic man may be distinctly benefited by the use of tobacco within the physiological limit and well within that limit.

Contrary to the general opinion, I believe the cigarette, if not smoked to the hilt, is the least harmful form of the weed. The ordinary cigar is too strong and bulky for the heart patient, and the pipe needs a " draw " which the cigarette does not ; moreover, it is generally not a clean instrument.

Free indulgence in tea or coffee must be checked, and " big drinks," however innocent their composition, should be avoided.

The under-nourished man should be fed as carefully as the plethoric, but he may eat farinaceous puddings and be put on cod-liver oil as well. He is not exactly to be fed as a phthisical under open-air treatment, but supplementary meals may be given him with good results in the form of

good soup, milk and doses of hæmatogen. And, generally speaking, this freer diet should also be exhibited to the man with a disturbed innervation, unless it be evidently caused by gouty conditions.

The medicinal treatment of the conditions we have just been considering is in many aspects an important one. Practically it resolves itself into the treatment of a gouty and inefficient myocardium, an overloaded and probably degenerating myocardium, and a feeble and easily overstrained myocardium.

I think *colchicum* has a very strong claim on our notice in the treatment of first section; the quick, rapid pulse, the intermissions, the collapse—all point to it as in large doses, a peculiar and distinct depressant. According to our rule of practice such a medicinal action, especially when it is confirmed by the totality of symptoms, would lead us strongly to rely on the therapeutic value of the pre-primary or plus action of this drug in small doses. In severe cases it should not be given in more than the second decimal dilution, though in more chronic and less markedly severe attacks the first decimal might be used with advantage.

Digitalis is another remedy made use of by both schools of medicine. When there is rapid and irregular palpitation and heart distress, but without marked dilatation, it becomes a valuable remedy in the second or third decimal dilution. But when weakness, mere intermittence, and a general condition pointing to atony rather than irritability, the first decimal, or else drop doses of the mother tincture, are more dependable.

There are three remedies which are extremely useful in cardiac pain of a chronic nature occurring at this time of life. I exclude aconite, because its indication, generally speaking, would be in most cases marked by a certain amount of fever or at least erethism, as well as from the fact that it is very specially the medicine of the young.

Spigelia is markedly the remedy of the weak, neuralgic, and undernourished heart. The pain is not of a severe character, but it is evidently cardiac in location; it is associated with such tension and palpitation as we get in this class of cases, and there is often pressure and weight on the heart region, besides tension in the brain and semilateral neuralgias of the head.

Next to this I would mention *cactus*, a remedy probably as useful in the male sex as *spigelia* in the female. The special indications are pain and oppression just as if an iron hand were grasping the heart, intermittence of heart and pulse, feebleness of heart's action generally. Rubini's classical proving of this drug, supplemented later by Hencke and Lembke, seem to my mind to produce a series of facts concerning the power of this drug to induce heart weakness, intermissions, and suffering of a most marked and undoubted character. It is in our school a drug in daily use for just those special symptoms which these observers elucidated. Nature properly and carefully interrogated reveals the curative power of small doses by indicating the track affected by larger doses, and also the lines of special affinity through which they act.

The third remedy of this analgesic group is *glonoin* or *nitro-glycerine*. For the pain which commences in the cardiac region and has a tendency to pass across from the chest to the left arm and down to the fingers, accompanied with a dyspnoea, anxiety, and fear of impending death, this remedy (just as amyl and the nitrites) has a remarkable power of bringing relief. The quick, rapid, and often irregular pulse, the headache and distress, the shooting, throbbing pains, the anxiety and shallow respirations, the palpitations, the pain shooting through to spine and down the arms, the flushing of the face followed by extreme pallor, fainting, and insensibility, all make up a striking picture of what one recognizes as angina.

And I feel sure it is your experience, as it has been mine, that the relief to these marked symptoms has been over and over again of a satisfactory character. The dose I generally prescribe is $\frac{1}{100}$ of a grain.

The short list of remedies which I am bringing before your notice this evening would not be complete without the mention of *strophanthus*, which is in common parlance a heart tonic, and no doubt a very valuable one. I have found it of great use in the chronic weak heart when dilatation is of a moderate character; when uneasiness rather than pain is present, or, if there is pain, pain of a slight and limited character, an ache, as of fatigue; when the pulse is occasionally intermittent, but palpitation is not of a vigorous paroxysmal character. The experiments of Fraser, Piedvache and others lead to the conclusion that the *plus* action of *strophanthus* is to be found in the dilutions or in drop doses of the rother tincture, and that as soon as full doses are given the cardiac impulse is enfeebled, arrest of its action follows, and paralysis of the organ finally ensues.

Among the lesser-used heart tonics may be mentioned *spartein* and *convallaria*; and as special tissue remedies acting on the degenerating myocardium I must mention arsenic and its iodide, iron, and barium.

The hygienic treatment of cardiac weakness may be summed up:—

- (1). As it relates to pure air.
- (2). As it relates to ordinary movement and exercise. Impecuosity must give way to deliberation.
- (3). As it relates to regulated movements, opposed and self-opposed.
- (4). As it relates to baths.—*Monthly Homœopathic Review*, April 1904.

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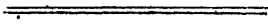
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IONS IN BIOLOGY AND MEDICINE.

BY AN IONIST.

II.

(Continued from last number, p. 182.)

Another issue of the process of archigony is that animated cells are produced by inanimated atoms. The atoms on the other hand are composed of the ions. In short, the belief in the process of archigony leads us to the ionic existence of life. The application of the theory of monism will further tend to accept one kind of ion as the source of all materials, either organic or inorganic, animated or inanimated, so far as they relate to our terrestrial world. Our solar system suggests the affinity of the ions with the sun. Beyond that it is now the province of the unknown. All constructive ions come from the sun, is the final hypothesis. For that reason, the ionic activity is mostly displayed when the sun is in his full refulgent power, whether that vigour is derived from the chromosphere or photosphere of the sun. That ionic activity bestows health and sanitation. Evolution by natural selection is the highest benefit that can be given to particular species due to the best kinetic energy of the formative ions. The alteration of the ionic energy produces

variation of species. The supply of food and the change of state to produce capacity for vigour in varying circumstances with regard to the exigency of climate and season are ionic gifts. We are not without the ions and the ions are not without the sun. The solar heat and light are imbedded in his ions which give us the maximum good. They also destroy the morbidic poisons which may attack the human body. I may be ridiculed for my ionic belief, but I firmly believe that ions are the basis of our life. That minutest energy, that infinitesimal power and vigour, constitute what we are.

Again to biology. The human blood contains three kinds of corpuscles. The white cells, red cells and platelets. The nature of the third form still remains unexamined. They are considered as either disintegrated white cells or precipitates in the blood. Enough research has not been performed with regard to the white and red blood cells. So far as I can understand they form two opposite polarity in action. The white cells do not yield the mature nucleo-proteid which is known as thrombin found in the red cells. The fibrin-ferment is of an inferior type and may be supposed to be a precursor of the ferment, which may be called as prothrombin.

The old theory of the derivation of the red cells from the white cells or the platelets is exploded. The supposition of the same basis for their derivation is not consistent with their opposite action. The dissimilarity of their ionic nature points to their different origin.

The prominent fact which is revealed by the spectrum analysis with regard to the blood is significant. The most important constituent of the blood is oxyhæmoglobin. Hæmoglobin is the carrier of oxygen and it exists in the red corpuscles. The arterial blood which is our life-fluid assumes the red colour mixing with oxygen. The hæmoglobin when oxygenated in the lungs imparts our life and health, and therefore it is called the respiratory pigment. In the field of the spectrum, it may be said that D line is the most prominent of all the lines. That line represents the absorption band due to the vapour of sodium which

so largely pervades the solar atmosphere. It so happens that the oxyhæmoglobin gives its best and most prominent line near the D line of the solar spectrum. This is significant, supposing the basis of our ions from the sun. The coincidence is remarkable. The probable inference is that the oxyhæmoglobin is a substance having affinity with sodium. In these days of wonderful discoveries, we cannot say what new light of knowledge will be showered on us. The kinetic manifestation of ionic energy of living nervous tissues is discernable by the Blondlot rays. The phosphorescence of nervous centres is a new feature. The N rays are more prominent in the active state of those centres than in their potentiality. Being right handed, the left hemisphere of the brain shews the marked preponderance. During speech, the left frontal convolutions bestow more N rays than when remaining speechless. The phosphorescence is in proportion to the ionic activity of the brain centres. Perhaps, the day is not far distant when the measurement of the N rays will shew the relative capacity of the brain-centres of different men and that will settle the priority of their position.

It must not be supposed that one kind of ion pervades in the cosmical and terrestrial regions. The solar ions, the progenitor of all bodies, have differentiated themselves and assumed different types according to the exigency of circumstances. The formation of different bodies takes place with the co-operation of distinct ions. Their characters have changed and become more complex in proportion to the specialisation of different organs. In the reproductive organs of simple nature, the ions could easily conform to the different processes of cell division. The next complex nature was assumed in the co-ordination of male and female cells, retaining the power of asexual production as in parthenogenesis. The supposition that the second polar globule is retained after the first sexual connection, and the second polar globule afterwards gives birth without sexual conjugation remains to be further examined.

At any rate if it be true, then the production from the second polar globule shews evidence of inordinate residual ionic.

energy. These varieties of reproduction are confined to invertebrate animals. The vertebrates can not follow any other rule except the sexual impregnation limiting the power of reproduction.

The next forms of cell division are peculiar to vertebrates. Holoblastic is that kind of cell division in which the whole ovum takes part. Meroblastic is that process in which a portion of the ovum, that is the cicatrula divides and sub-divides. The former can be said to be more advanced than the latter. These kinds of cell divisions must be accepted as more complex than the preceding forms, according to the specialised nature of the ions. The ions impart the primitive force and direction to the cells on account of their advanced conditions. In their attempt to differentiate they themselves form distinct varieties.

The relation of the sun with terrestrial bodies is an acknowledged fact. The vibration of the magnetic needle during the appearance of large solar spots is well established. The affinity of terrestrial heat with that of the sun is a problem for research. Drought and rainfall may be somewhat due to the sun, but there are other factors which contribute their influence as well. The death of pathogenic microbes by solar heat can not be denied. The prime agency in sanitation is the solar heat and light. After all these considerations, it will be idle to deny the salutary influence of the sun.

Further, it is a known fact that three kinds of rays come from the sun and they produce most beneficent effect in the germination and growth of a plant. The chemical rays penetrate the earth and help the seed to germinate. The plant on reaching above the soil gets the assistance of the light rays which decompose carbonic acid gas from the structure of the plant. The heat rays assist further development and are particularly necessary for the formation of flowers and fruits. Several kinds of ions of the solar corpuscle may be said to combine in these rays. Ions of any substance whether organic or inorganic, animated or inanimated, are acted on by the distinctive qualities of the solar ions. The similarity of ions of all sub-

stances makes it possible to act and be acted on, following the law that Likes are acted on by Likes. William Schusister of Chicago is an able exponent of the all-pervading force of this widely prevalent homœopathic theory. He says :

“The non-metals, phosphorus, sulphur and iodine, and all the halogens, possess the same property as carbon, or extraordinary transparency for the invisible heat rays, not only alone but when combined with other elements. Thus iodine dissolved in bisulphide of carbon is extremely transparent for these rays, but cuts off the other rays, and the particular fact to which I would call your attention is that iodine, phosphorus and sulphur are soluble in carbon compounds, are insoluble or slightly soluble in water. Surely this is not a mere coincidence ! Surely not when we consider that “like dissolves like ”; that there is in most cases a relation to be seen between the chemical composition of the solvent and that of the solid it dissolves ; ether and benzene both highly carbonaceous liquids, freely dissolve fats and other substances which are rich in carbon.”

The affinity of composition creates the possibility for action. For that reason, the solar ions act on all other ions, having still the similarity of character. The heat rays can also be said to be mostly dynamic and the light rays principally physiologic in their action.

The spectrum of solar light imparts the seven well known colours,—violet, indigo, blue, green, yellow, orange and red. The two extremes in the series are violet and red. Ultra-violet gives the most chemical, green the most physiologic (light), and red the most dynamic (heat) rays.

It is a significant fact that plants grow rapidly under the influence of red light, blue favours the growth very little and violet makes them to remain in a dormant state. Dr. James Weir writes thus, with regard to their effect on animals :

“ In 1883, while studying the mutation or the color-changing function in certain animals, I reared a large number of newts or salamanders, from the eggs. The eggs were placed in shallow

vessels which were covered by colored glasses, blue, orange, green and red.

"The eggs under the blue glass hatched out first ; under the orange second ; under the red third ; and under the green last of all. The young larvæ under the red glass were much more active at first, than those under the other glasses, and attained full maturity several days earlier. The larvæ under the blue glass, however, grew to be much larger and in the end were much stronger and more agile. Under the green glass, the larvæ were sluggish, and of slow growth. I noticed, moreover, that whereas there were no monstrosities or deformed animals under any of the other glasses, there were many under the green and the orange glasses."

These facts demonstrate that the seven colours produced by the seven or more different kinds of ions, which by their mixture create the white light, have the power to produce metabolic changes in plants and animals. In both, the chemical rays are mostly necessary to start life, though the others can do so to a slight extent. The physiologic rays are not so much beneficial to animal life, as to that of plant. The dynamic rays are most useful to all, and specially to animals.

As to the question of monstrosities, other experiments are necessary to arrive at a satisfactory conclusion. The science of teratology notwithstanding many researches of French biologists remains unsatisfactory. So far it can be asserted that nutrition of animals and plants is dependent on the solar influence. The different colours represented by the many varieties of ions do produce abnormalities of nutrition, creating the irregular characters known as monstrosities. The exact sphere of influence of the ions in manufacturing abnormal growths remains to be determined.

The ionic colours have the powerful action in destroying microbes. Ward, Finsen, Berghold and others have shewn that the influence of blue, violet and ultra-violet rays is fatal to bacteria. Among them Finsen has practically carried these colours into use. A few are following him in chromopathic cures, while others

have improvised a new step in giving a flood of white light for remedying other evils.

The radio-activity of the ions of radium has made it possible to cure a few cases of cancer. The extraordinary cost is in the way of its general use. The close study of the several kinds of ions will enable us to apply them in those diseases which are now pronounced incurable. It must be said that the individual consideration of each distinct kind of ions as represented by single medicine is necessary to understand their peculiar nature; the mixture into a massive form not only prevents their free display of power but physiological and chemical incompatibilities frustrate their individual effort, and most probably the combination forms a new and unknown compound. These are serious obstacles to understand the precise nature of a mixture of several drugs, represented by the unification of many kinds of ions.

The ionic activity of medicines lands us to a partially explored region. The conception of their action in a condensed massive form of mixture as opposed to the behaviour of a single drug, would have remained grossly hypothetical, had not homœopathic provings and toxicological effects given a glimpse of light to understand their nature. Analogy further helps to elucidate their ways.

The difference of action of an ordinary electron or electric ion is opposite to that of an extraordinary electron. The two electrons positive and negative, when combine together in an ordinary atmosphere shew the preponderance of the positive ion over the negative kind manifested in the discharge of the spark from the positive to the negative pole. Geisler's tubes exemplify that kind of action. The electrons being hampered in their action by their own condensed mass generally shew the feeble preponderance of the positive nature. That character is assumed after the struggle for existence of the several kinds of ions. Infact, the antipathic nature of the positive ions with great difficulty asserts its power. Some are destroyed, others assume a potentiality, and the rest try to shew an influence, if they

have the power to do so. After fighting a great battle, it is not easy to manifest their true nature. Immolation and potentiality are the general results. Assumption of antipathic character rests with the few. In some cases, the victory leads them to have their exuberant action, which is extremely modified by their subsequent behaviour, when the action is followed by reaction. Stimulation is the precursor of dull lethargy. The prodigious action vanishes within a short time to be superseded by inaction. In a few cases, the dull lethargy brings the sympathetic action of the negative ions of homœopathy for the final rescue. The effort to destroy the pathological ions, as represented by microbes, toxins or other infinitesimal morbid materials, by the super-abundant massive mixtures not only may immolate the pathogenic ions, but the physiological ions, represented by the term vitality, may also succumb in the struggle. There is the end of the man and the disease.

In other cases, the antipathic ions not being able to annihilate the pathogenic ions, themselves die in the struggle. The disease consequently remains as it is, or assumes a great activity as the result of reaction. In the case of microbes they rapidly multiply and terminate life. With other morbid materials, it is a prolonged existence of the miserable suffering of a man to recover at the end by the effort of *vis medicatrix naturae*, or to have slow death by the gradual immolation of the physiological ions.

In cases where toxins or ptomaines are left, their poisonous influence not capable of multiplying, a calm and methodical precision in the administration of the medicine is necessary. The huge massive doses, in most cases are unequal to the task for their indefinite unmethodical action. These critical states are produced by the unscientific heteropathy or allopathy, which has assumed the name of the so-called rational medicine.

The two electrical ions in rarefied condition have the extraordinary or the opposite behaviour. The single medicine composed of a few ions like the electrons in Crookes tubes shews the preponderance of action of the negative medical ion. There

is no struggle for existence among themselves. Ample display of power can be within the range of the ions. The homœopathic or sympathetic behaviour is the natural out-come. The negative medical ions like the negative electrons exert an unusual influence. Modern research with regard to the two electrons has proved that the negative electrons are more mobile on account of their smallness than the positive electrons. Under the influence of an equal electrical force the negative electron moves much faster than the positive electron.

The connection of the negative electrons with the solar rays has been further established. "The ultra-violet element in sun light causes the earth to freely discharge negative electrons in the stratum of air in contact with the earth's surface, and this when heated carries its charge of electrons to considerable heights."

Further, "The ultra-violet constituent of sun light is known to be an effective cause. Another cause has been suggested by Schuster, namely, the presence of the radio-active substance of the earth. The particles projected from the radio-active substances are known to be powerful ionizers of air. There has been a growing tendency of late to believe that the sun emits cathode rays or negative electrons, which penetrate the upper strata of our atmosphere. It has also been suggested that the heat of the sun is due to the presence in its mass of radium in high percentage. Both cathode rays and emissions of radium are powerful ionizers, and they may, therefore contribute largely to the production of free electrons in our atmosphere."

Another view may be taken of the seven rays of the sun on the basis of the cathode and anode rays. The ultra-violet represents the chemical and the cathode rays. Its symbol is hydrogen, as it shews the negative unit of repulsion. The infra-red represents the heat and anode rays. It can be symbolised by carbon, as it shews the highest heat and positive unit of attraction. Oxygen is mixed with all, in more or less quantities. It has more affinity for carbon than hydrogen and is itself an anode.

There is danger in the extensive preponderance of positive

electrons. On the Alps, in Switzerland, occasionally a kind of south wind prevails. It is called the Fohn. It produces a sickness which is called the Fohn sickness. The Fohn sickness is produced by the excess of positive electrons. The symptoms of the disease is thus described :

“ The change of the electronic content of the atmosphere appears to have a specific effect on the human organism. Czermak, who has studied this phenomenon in the Fohn region at Innsbruck, is disposed to connect the increase in the density of positive electrons with the so-called Fohn sickness which attacks sensitive persons.”

During Fohn “ the charge of electrons was not only absolutely very high, but the normal preponderance of negative electrons was changed into a decided preponderance of positive electrons.”

I come again to the negative medical ions. The germicidal power of the plasma and the white cells are considerably increased by them. The well-adapted application of single medicine is infinitely superior to the massive mixture of incongruous ions. Congruity forms the life in homœopathy. The all-pervading law, Likes acted on by Likes, comes to display a vigorous force. It must be remembered that there are dangers in homœopathy as well. We do not mix medicines, like the so-called rational heteropathy. The administration of incongruous medicines has its dangers. It is false to the very letter that homœopathic medicines can do no wrong even when mis-applied.

Mis-application is essentially wrong in any shape. The danger of the method of homœopathic practice by the aid of symptomatology is experienced by all well regulated men. The exposition of symptoms is alone possible on the basis of pathology. Where pathology is deficient in the explanation of morbid symptoms, there a broad sense of pathology is the guide to understand them. In the dark days of Hahnemann many things were impossible. Many inexplicable symptoms of those days are now understood by the rapid advancement of science. The knowledge of pathology is also the surest and the

best guide in explaining the medical pathogenesis known as Provings.

If man-made-laws require guidance, annotation, exemplification and explanation, it seems ludicrous that in unravelling the intricate courses of diseases no help is necessary, except the common sense of the medical practitioner. The disaster is that some of them have truly forsaken the domain of common sense, and on the contrary think that it is their hereditary possession.

It has been said that the action of the ions of homœopathic medicines is like the negative electrons in a rarefied atmosphere, that is, not receiving obstructions in the legitimate performance of their task. The attenuated dose of homœopathic medicine, from mother tincture to higher dilutions can be compared to the rarefied condition of Crookes' tubes.

The negative medical ions, like the negative electrons, can act to a certain limit. A high state of rarefaction in Crookes' tubes, say, more than the millionth of an atmosphere will frustrate the display of their kinetic energy. That ultra-high attenuated state of matter will not allow even the passage of negative electrons. The inference leads me to think that homœopathic attenuations can not be attenuated to *ad infinitum*. Where the limit will be, can not be at present conjectured. The safety is that the so-called high potencies are not numbered as they are. They are far below the mark.

The high attenuation of homœopathic medicines leads to another consideration. It is supposed by some physicists that the ethers are destroyed ions and they are not matter. They consider them immaterial substances, rather akin to ultra-material force. The consideration of the ultimate particles of ions as ethers, makes it possible that they are material bodies. Professor D. I. Mendelejeff in his paper, An attempt at a Chemical Conception of Universal Ether, thus considers the ethers to be material substances :

"I believe that radio-activity indicates a material emanation and that the arrival and departure of ether atoms are accompanied by the disturbances which constitute waves of light."

The ultra-high dilutionists among homœopathic practitioners may argue that the extreme high attenuations behave like the ether. It can be said that the comparison is unhappy in several respects. The behaviour of ether in its continuous arrival and departure presents the idea that continuous series is necessary to produce a stream of light. A single dose of the supposed high attenuation of the homœopathic medicine does not produce that continuous chain of symptoms which may produce immediate effect. The continuous administration of the ultra-high attenuations is not possible for the many bad results they produce, and that ultra-divided matter as ion or ether is not possible for frequent action in medicine, is admitted by the high dilutionists. Further, the assumption that they are ultra-high attenuations is not possible for the bad method of their preparation. Attenuations are not capable of infinite division. There is a point beyond which they cannot be divided. The final number of the attenuation can only be ascertained by a well regulated method of division, pathogenic manifestation and clinical verification by scientific homœopaths.

A few words are necessary with regard to the theories of "side chain" and immunity by Ehrlich. His theories have thus been summarised. "We conceive of the cell as a mechanism for the storage of energy derived from without, and for its release under definite conditions. The details of this metabolism still elude the keenest scrutiny of the chemist. But Ehrlich seeks to explain the cell's performance in general terms. The cell consists of a central group of very complex molecular combinations which maintain the characteristics and special capacities of the cell as an organism during all its existence. Associated with this central group are many and varied subsidiary atom complexes which by means of their unsatisfied affinities, bring the central group into relationship with nutritious or toxic material. These unsatisfied affinities, by which assimilable material is fixed or united to the cell are called side chains or receptors. The cell is capable of selecting or fixing out of the host of various substances with which it comes in contact, just those only those to which its receptors bear a definite chemical relationship."

Ehrlich in his theory of immunity explains that the toxic materials are absorbed by a side chain or indirect group of cells keeping in contact with the central group. The unused cells of the side chain which are called receptors can assimilate those substances with which they have chemical relationship. He, thus, takes for granted two causes for the operation of immunity. The first is the side chain of cells, and the other is the theory of likes. The side chain cells or the receptors can not act unless the principle, Likes are acted on by Likes, is not satisfied. That is the main cause of absorption of toxic materials.

The next noticeable fact is that the receptor cells represent the units of ions, and display the most activity. They are those which are not used up. The unsatisfied ion-units shew the greatest desire for absorption of similar toxic materials. How the immunity takes place is explained later on shewing the increased action of the ions: "According to Ehrlich, the cells being acted upon by the toxic substance proceed to regenerate action and manufacture more receptors. Weigert has emphasised the fact that the regenerative impulse is apt to exceed the actual requirements. So the receptors, some of which are occupied by the toxins, are manufactured in excess of the demand, and many of them are thrown entirely off from the cell and float free in blood. The blood, then containing large numbers of these free receptors that have an affinity for particular toxins, becomes an anti-toxic fluid. For the toxins form a chemical union with the floating receptors, and thus having their affinities satisfied, become innocuous, and pass harmless through the system. The anti-toxic serum may be transferred to another individual and combat the disease there. So the receptor which attached to the cell was an element of vulnerability, when floating free in serum becomes an antitoxin and a protection."

The peculiar character of the theory is that it deals with only toxins and not microbes. The microbes are attacked by white cells. This is a positive and demonstrated fact. The toxins are left alone, remaining untouched by the leucocytes.

The microbes should be considered as pathogenic ion-units. The 'toxin cells are also liable to be valued as pathogenic ion-units of another variety. The doubtful issue is that when microbes are caught and destroyed by the leucocytes, another form of that morbid material escapes and forms antitoxic substance.

Again, all these theories are based on the ionic activity of physiological cells unaffected by any disease. This I consider to be the so-called vitality. Ehrlich's affected receptors are supposed to create anti-toxic fluids in all cases. In other words, he assumed that death or loss of the ionic activity of physiological cells is not possible even being highly affected by toxins. It may be said that when the manufacture of fresh receptors does not take place, even then absolution is not the necessary consequence. On the other hand, it is observed, that the affected receptors are only absorbed by the blood as effete materials. The fresh receptors have no place in the blood. For many reasons, Ehrlich's assumptions do not fulfil our expectation.

Further observation on the whole value of the ionic metabolism leads me to conclude that the toxic receptors as effete materials are liable to be purged out by the activity of the secretive or excretive glands. As specialised ionic units they have to perform difficult tasks. The antitoxic influence is not liable to be preserved for a long time. The toxic receptors as pathogenic units can not be a constant quantity as opposed to the physiologic units. They must undergo keen contention, for the one or the other to survive. The antitoxic power is due to an unnatural product. For this reason homœopathy can not tolerate such artificial degenerative influences. It has not the power to regenerate the ionic metabolism. The toxic receptors can not multiply like microbes. The ultimate consequence is that they are purged out of the system.

The most important issue in the antitoxic problem is with regard to the use of the several isopathic preparations in their attenuated form. Whether they act like the toxic receptors as explained by Ehrlich, or they act in an opposite way like

the homœopathic ions, remains to be conjectured. The attenuated forms of isopathic remedies most possibly can not act like the large and ponderable toxic agents. For they are liable to be destroyed by the normal influence of the physiological ions of the blood and the various specialised organs. I venture to say that they act like the homœopathic ions in an opposite way, producing a power similar to the disease. Though the derivation of the drug-power comes from the same source, but the reduction of the shape of the ions of the same medicine, contributes to it an activity equal to the negative electrons.

In other words, these isopathic attenuated ions act like the homœopathic attenuated ions. The similarity is mostly observable in the application of the homœopathic high dilutions of methodical attenuation, to counteract the influence of the low forms. When the attempt to destroy the pathogenetic action of lead poison by Plumbum 30 has succeeded, when Nux. v. 30 is able to dissolve the energy of the mother tincture Nux, when Belladonna 30 can nullify the power of the mother tincture Belladonna, it would be unreasonable to suppose the mode of action of isopathic remedies in attenuations in other ways than that of the homœopathic remedies in attenuated form. The close similarity allows us to apply the same mode of action in the two forms, though widely divergent in their derivation.

An electrical experiment, which was often repeated by the late lamented Dr. Mahendra Lal Sircar, has a close analogy with the behaviour of the two medical ions, positive and negative, signifying the massive and the attenuated forms of medicines. The experiment, I think, is more applicable to the use of isopathic remedies in attenuated form than to that state of the homœopathic medicines. It is this. The free ends of a thermo-electric couple, which consist of the twisted terminations of a copper and an iron wire, are attached to the two poles of a galvanometer. The first application of heat from an ignited spirit lamp at the twisted end deflects the needle galvanometer in one direction. The red hot state of the wire is compared to the massive dose. The continued application of the same heat makes that twisted end white hot.

The effect on the galvanometer is to deflect its needle in the opposite direction. This white hot state may be said to be the attenuated dose.

Objection may be taken to the analogy, in comparing the white hot state of the twisted couple with an attenuated dose. The additional heat to the red hot state to make it white hot may be said to be the massive dose. But if we try to understand the whole phenomenon clearly, we come to a different conclusion. The additional hot state to arrive at the white heat is necessary for the reduction of the size of the positive electrons to bring them to the negative state and to preponderate in their action over the positive electrons. The negative electrons thus increase in number than the other. The kind of the substance remaining the same, the attenuated form of the negative electrons behaves in a way similar to the attenuated ions of isopathic medicines. This experiment for many reasons leads me to suppose the equality of action of the homœopathic and isopathic ions in attenuated doses.

In the rapid stride for advancement of science and theories, it is not improper to base our ideas on conceivable imaginations. There are difficulties in the successful attempt. Whatever those difficulties may be, the consideration of the reign of ions, from the solar cosmogony to the terrestrial infinitesimals, impress us with the all-pervading influence of ionic matter. The intensity of the force of ions can not be ignored. We may remain ignorant being unconscious of the activity, but that unconscious ignorance will not be a safe guide to our knowledge and advancement. We must go forward in search of further knowledge on the basis of facts already discovered. I join with the distinguished German poet Gœthe, in giving expression to his forcible word "Ueber Graber, Vorwärts!" Over the Graves, Forward!

EDITOR'S NOTES.

Transposition of Viscera.

The following is from the *Lancet*, April 30, 1904 :—

"A young man, aged 19 years, was admitted with pneumonia of the left base, and on examination it was discovered that all the viscera were transposed, the heart and spleen to the right, whilst the liver lay beneath the left ribs. He was a source of much interest to myself and to all my colleagues while he remained in the hospital. He made a good recovery from his illness and went into service near Brighton and for some years continued in good health. He had never been robust and always carried a "high colour," but until his attack of pneumonia he had suffered from no serious illness. His father died from heart trouble ; his brother, who had been a groom in my stable, was healthy and possessed no malformation. It was from him that I heard of my hospital patient's well doing for some years after he left this neighbourhood."

Such transposition has been observed in a body for dissection in the Campbell Hospital, Calcutta a few years before.

Volunteer Force in India.

The special correspondent of the *Lancet* expressed the following opinion in its issue of April 23, with regard to the physique of the force :

"A recent inspection of volunteers by Lord Kitchener called forth the opinion from him that every Englishman by birth or decent should be a volunteer. It is to be hoped that under his ruling some improvement in the physique as well as in the status of the force will be brought about. The Government and the military forces have hitherto shown very little interest in volunteer movements. It is generally forgotten that by the Army Regulations the force should be a European one. This has not been adhered to. It is not very long ago that nearly every European in the Hyderabad (Sind) corps resigned and that the inspector general drew attention to the fact that some corps, especially the Allahabad and Poona Rifles, had ceased to be European in character. It does not appear that the Government has taken any action in this matter, but while so much attention is bestowed on the native troops and the permitted contingents of the native States very little is done for the volunteers. I had occasion to draw attention to the physique of those picked corps which attended the Delhi Durbar but the ordinary ranks of most corps are lamentable."

A Quack Fined.

A quack styling himself a doctor was fined at the Bradford Police Court in England. Calcutta is now full of such doctors, calling themselves "M.D." We hope steps should be taken to take them to the Police Court of this city for false representation as qualified medical practitioners. The action at Bradford was taken by the Medical Defence Union. Here in the absence of such an Union it is expected that the Commissioner of Police would undertake the business. The facts are from the *Lancet* of April 30, 1904.

"A MAN named Lewis Hirst, summoned recently at the Bradford police court at the instance of the Medical Defence Union for taking and using a title implying that he was a qualified medical practitioner, was fined £40 and £1 8s. costs with the alternative of two months' hard labour. The evidence as to the infringement of the Medical Act showed that to witnesses who called at the house where the defendant carried on his trade and who said when he appeared that they "wanted to see a doctor," he replied "I am Dr. Hirst." A bill containing his advertisement also stated that a "qualifying surgeon" was in attendance. If this expression is correctly given in the account of the proceedings before us it must be taken as implying qualification to the ignorant who would understand it to mean a "qualified surgeon," and as intended to leave a loophole of escape to the quack who would deny that he represented himself to be qualified. It may be, however, that the word "qualified" was in fact used and the matter is not of great importance as no doubt, in inflicting the exemplary sentence which he imposed, the stipendiary magistrate was largely influenced by proof of the extent to which the quack was prepared to impose upon the humbler members of the community under the disguise of a medical title. A witness who had shown to Hirst his arm was asked, apparently by the solicitor for the defence, what he was suffering from and he answered "nowt"—a reply the truthfulness of which was not questioned. The defendant, however, had said that the pretended patient's "blood was out of order" and had added that he would make it right but that it would take him about three years to do so. It is not surprising that the stipendiary magistrate observed that such a case was an extremely bad one and pointed out how much the public were indebted to the Medical Defence Union for instituting the prosecution. We observe that the business carried on was advertised under the name of "King and Co.," but apparently no point was raised as to the existence of any company and as to the position of the defendant with reference to it."

Deaths and Quack Medicines.

The following facts from the *Lancet* of 9th April, will be enough convincing to those who keep an easy conscience, and think that virtue and vice are all marketable productions :—

“At an inquest held on March 30th Mr. Troutbeck inquired into the death of a child aged seven months. Medical evidence was given to the effect that the child weighed only nine pounds and died from meningitis set up by improper feeding. The mother stated that she had fed the child on tinned milk and a food prepared by a local druggist. One of the jurors raised a question as to the sale of foods and pointed out that they were sold as foods fit for children. The coroner said that in the present state of the law the sale of these foods by means of enticing advertisements was allowed and there was not the slightest doubt that this was the cause of a great deal of disease and death. The same remarks applied to patent medicines but in their case the State made an immoral profit on their sale. We are glad to be able to agree with Mr. Troutbeck. The false statements which are made in advertisements are only too flagrant and whether the Government wishes so or not the revenue stamp on patent medicines is taken as an endorsement of the statements about the medicines which are made by the proprietors. A morning contemporary publishes a series of police regulations which have recently been issued in Lubeck regarding unqualified practitioners and very admirable they are :—

Persons wishing to practise medicine professionally without being approved by the State must notify their intention to the Medical Bureau. They must immediately report, with the name, age, and residence of the patient, if they advise or treat a person suffering from fevers and diseases of an inflammatory nature. The rules regarding advertisements are very stringent, reading as follows : Public advertisements by non-approved persons are forbidden, in so far as they are calculated to mislead concerning the training, capacity, or success of such persons, or contain boastful promises. Public advertisement of the objects, apparatus, methods, or means which are applied for the prevention, alleviation, or cure of illness is forbidden, when (a) superior power over and above their true worth is attributed to such objects, apparatus, methods, or means, or the public is misled by the manner in which they are described ; or when (b) the objects, apparatus, methods, or means, by the nature of their construction or quality, are calculated to bring about injuries to health. These regulations are to come into force on May 1st and any contravention of the

same will be punished by a fine not exceeding 150 marks or by imprisonment.

We commend the rules regarding advertisements to the Commissioner of Police in London and the watch committees in the provinces. If something similar could be carried out here it would bear hardly on those newspaper proprietors who insert lying advertisements of the kind issued by Pointing and "Dr." McLaughlin, and upon that disgraceful quack, "Dr." Bell who scatters his dirty pamphlets broadcast through the assistance of His Majesty's Postmaster-General. Any respectable magazine or newspaper should be ashamed to take money for inserting such advertisements as those to which we have alluded. In this connexion we see that Pointing or the Century Thermal Bath Cabinet Company has been summoned at Marlborough-street police-court regarding his Magic Food Drafts and for selling the same without a stamp. A fine was imposed of 10s. and costs."

Hereditary Transmission.

The following from the *Lancet* of April 16, 1904, is interesting inasmuch as it has shewn the hereditary transmission of acquired morbid conditions. One fact is that those experiments of Dr. Delamare require to be repeated and confirmed :

"In a recent *Thèse de Paris* (1904) Dr. G. Delamare of Paris, working at the laboratory of Professor Charrin, has given an account of the results obtained by him in this branch of study. Hereditary transmission from the parent to the embryo, says Dr. Delamare, may take place in one of three ways: first, the germ cell or the ovum may be damaged or altered as the result of grave constitutional disturbance or disease acquired by the mother at or before the time of conception, a similar condition being possible also as regards the spermatozoa of the male parent; secondly, the impregnated ovum before it has undergone differentiation into its embryonic rudiments (pre-embryonic stage) and while still free in the Fallopian tube or encapsuled in the uterus may be subject to the action of toxic, cytolytic, and other disturbing morbid agencies present in the maternal blood plasma; and, thirdly, the embryo may be affected *via* its placental attachment to the mother which takes place at the third week and marks the beginning of embryonic life proper. These modes of hereditary transmission are not identical and should not be indiscriminately confounded under the general term "heredity" by "acquired" characters in the pathological sense are to be included, says Dr. Delamare, those changes of a physico-chemical or morphological nature

which are produced *de novo* within the parent organism, not having been inherited by it *ab ovo* but caused by the action of extraneous agencies of sufficient potency. Thus insanity or gigantism may appear in a man or woman whose parents are free from either of these affections and the man or woman whose parents are free from either of these affections and the man or woman thus affected may transmit the morbid condition in question to the offspring in a very marked degree. The same applies to cretinism. Gout of the father will, says Dr. Delamare, predispose to gout in the son whom he procreates and so will tuberculosis of the father predispose to a vulnerability or facile tendency of the son to acquire tuberculosis. Leucocytes are found to be able to transmit to their descendants (daughter leucocytes) the power of immunity acquired against certain diseases (Massart). That superficial and slight mutilations of the parent, such as circumcision and the rupture of the hymen, are not inherited is due to the fact that these do not produce bodily disturbance of nutrition or affect the composition of the blood and therefore cannot affect the germ or sperm cells. No nexus of cause and effect exists, but as the consequence of serious lesions of the nervous system or viscera of the parent experimentally produced Dr. Delamare states that the offspring may show in the corresponding organs conditions of disease or abnormality the nexus of which can be traceable as effect and cause. Thus as regards serious lesions of the central nervous system attended with constitutional disturbance the classical experiments of Brown-Sequard on guinea-pigs have shown that a special form of epileptic attack accompanied by certain trophic lesions, produced by hemisection of the dorsal spinal cord (rarely of the cervical and never of the lumbar spinal cord), is transmitted to the offspring with great frequency. These experiments have been confirmed by Obersteiner, Westphal, Dupuy, and Romanes, and by Dr. Delamare himself. A similar form of epilepsy produced in guinea-pigs by a less serious lesion—viz, section, crushing, or laceration of the great sciatic nerve—is also hereditarily transmissible. Massin excised half the liver in buck and doe rabbits and found that the descendants had small and malformed livers. Dr. Delamare found that removal of a kidney or of one suprarenal body in several guinea-pigs did not affect the corresponding organs of the offspring. Experiments were also made on two bitches, three rabbits, and 17 guinea-pigs to bring about local destruction of parts of the liver (hepatitis and localised cirrhosis) by injections of naphthol, distilled water, and dilute solutions of silver nitrate, all with positive results.

(partial atrophy, cirrhosis, and maldevelopment of the liver) as regards the offspring of these affected animals. He states that cytotoxins and cytolytins are liberated from the affected organ and circulate freely in the blood, and that such cytotoxins influence the germ cell or developing ovum while still in the embryonic state, causing it to develop and to manifest the characteristic lesions of the liver while still in utero. It was also found that hens which were hypodermically injected with extracts of such cytolytins laid eggs which were abnormal and damaged, inasmuch as when hatched they showed an unusual proportion of malformed embryos, dead embryos, amniotic hæmorrhages, and other abnormalities. Of 27 eggs of hens thus treated 21 showed the abnormal characters in question. The injection of bitches with hepatotoxins and nephrotoxins also produced lesions of the liver and the kidney in the growing embryos in utero. Dr. Delamare thus concludes that there are modes of hereditary transmission to the offspring of diseases (diatheses) from parents who have acquired them and that in some cases the pathological nexus of cause and effect can be traced."

Accident or Over-exertion.

The encroachment of law in the province of medicine is generally unpleasant. For all the difficulties produced by legal decisions, medical practitioners should be prepared to follow them. The *Lancet* of April 30, expresses the following opinion on the subject of accident as distinct from over-exertion :

"It is a matter of some importance to a medical man when he is called in to attend a working man to know whether the condition in which he finds him, the causes of that condition, and the treatment prescribed are likely to form the subjects of investigation in a court of law. Consequently recent decisions enlarging and defining the meaning of the word "accident" as used in the Workmen's Compensation Act, 1897, are of interest to members of the medical profession who may have to figure as witnesses as well as to their patients. Moreover, the signification and uses of words of frequent occurrence in the English language must always be worthy of the consideration of educated persons whose native tongue it is and who are in a position to form their own opinions upon the question under discussion. The phrase in the Act concerning which doubt has arisen is that which makes the employer liable to pay compensation to his workman for "personal injury by accident arising out of, and in the course of, the employment." It will be seen that not only must the personal injury be due

to an "accident" but also that the accident must arise out of, as well as in the course of, the employment. A large number of occurrences causing injury to workmen fulfil these conditions so plainly that, dispute cannot arise. With others, however, it is different. Frequently a workman becomes disabled although no outward fortuitous event such as is often associated with the word "accident" has taken place. Sometimes he has deliberately encountered excessive strain, as for example in lifting a heavy weight, and a hernia or other serious injury or the aggravation of existing injury has been the result. On such occasions medical evidence is necessary in order to explain the injury and to connect it with the workman's employment, but the question whether it has been "accidental" is a matter for judicial interpretation. The Act uses the word "accident" but does not define it. There were conflicting decisions upon the subject until the case of *Hensey v. White* was heard by the Court of Appeal in 1899. This and others which followed the precedent laid down in it may be said to have decided that where the work performed presented nothing fortuitous or unforeseen there was no accident. As an instance of these decisions may be cited the case of *Roper v. Greenwood* (83 Law Times, N.S., 471) in which a woman engaged upon the manufacture of wooden boxes had to turn and to move some heavier than those which she usually handled. Having lifted several with effort but without apparent ill-effect to herself she essayed another but complained at once of injury and was found to be suffering from prolapsus uteri induced by her exertions. This was held by the Court of Appeal not to have been an "accident" such as would entitle the woman to compensation. This case, with *Hensey v. White* and others of the same class, were overruled by the House of Lords in another (*Fenton v. Thorley*, 1903, A. C. 443) which may be described as a typical instance of over-exertion in the ordinary course of work. The workman had to raise the lid of a large vessel by turning a wheel. The wheel worked stiffly, he called a fellow workman and while they were endeavouring to move it felt "a tear in his inside" which proved to be a hernia and for which he claimed compensation. This was refused by the county-court judge whose view was upheld by the Court of Appeal following the decisions referred to. The House of Lords, however, unanimously decided that the Court of Appeal and the previous decision were wrong and that the workman should be compensated as for an "accident." This word Lord Macnaghten considered to be used in the Act "in the popular and ordinary sense of the word as denoting an unlooked-for mishap or an untoward event which is not expected or designed." Lord Robertson spoke of the word being used to denote "any

unintended and unexpected loss or hurt apart from its cause." The result has been, that the workman does not now have to adduce proof of an unforeseen incident external to himself and arising out of his work in order to be compensated. He can claim in respect of those results of physical strain of which a willing worker must at times run the risk but the actual occurrence of which neither he nor any one else can predict. This decision appears to be one in accord with the spirit of the statute and it is one which naturally has brought others in its train. In December, 1903, two cases came before the Court of Appeal in which the workmen had suffered from anthrax contracted in wool factories. Two county-court judges had given contrary decisions, one of them holding that the infection constituted an accident and the other refusing so to regard it. The Court of Appeal declaring the matter to be governed by *Fenton v. Thorley* had no doubt that according to that judgment infection with anthrax was an accident arising out of the workmen's employment. How far the possibilities thus suggested may be extended in the future remains to be seen. It was said by the county-court judge who refused to treat anthrax as an "accident" that if infection with disease was to be so regarded then a workman who caught scarlet fever from one of his fellows would be able to claim compensation from his employer and it is by no means impossible that some day claims of this kind may be attempted. Yet a third case of doubtful "accident" was more recently heard by the Court of Appeal in which, however, the question turned principally upon whether the occurrence arose "out of" the employment. In this (*Andrew v. Failsworth Industrial Society, Limited*) judgment was given on April 13th. The man whose relatives applied for compensation was employed upon a building which complied with the requirements of the Workmen's Compensation Act in being above 30 feet in height and he was working at a point 23 feet above the ground when he and a fellow workman were struck and killed by a flash of lightning. The expert evidence dwelt upon the danger arising from the height above surrounding object upon the effect of wet, and upon the fact that the man would afford a well-defined point at which a discharge might occur. The increase of danger owing to elevation was thus defined: "If you draw a line at an angle of 45 degrees from the highest point of an erection to the earth persons within the cone are protected and it is therefore clear that as you ascend the zone of safety diminishes." The county-court judge held that there was a right to recover for an "accident arising out of the employment" and the Court of Appeal confirmed his decision. It will be seen that the trend of these later judgements is towards widening rather than towards narrowing the scope of the Acts in question and that they are likely to make employers careful of the safety of their workmen in matters with regard to which they could before afford to be indifferent. They will also increase the number of occasions upon which medical evidence will be required."

CLINICAL RECORD.

Indian.

A CASE OF FIBROMA OF THE NECK.

BY HEM CHANDRA RAY CHAUDHURI, L.M.S.

Babu—————residing in Serpentine Lane was first seen on the 22nd May, 1904, suffering from a fibroma of the right side of the neck. On palpation, the feeling of fibrous tissue contained in the tumour was enough evident. The consistency was neither soft nor hard. Its size was that of a middle sized potato, smaller than an ordinary orange. The tumour probably, had its seat from a portion of the tissue just above the right lung, beneath the clavicle. From this place it was gradually growing upwards. It produced no pain, but there was a slight heaviness on that side of the neck. I prescribed *Calc. Iod.* 12 dec.

On the 29th May, he came to show me the dwindling appearance of the tumour. To my astonishment, I saw that it has lessened almost to half its former size within this short period. I advised him to continue the medicine. On the 4th June, he came again, I saw that it had considerably lessened.

He again came to show the tumour on the 18th June, and I could not detect a vestige of it. I advised him to continue the medicine a little longer. The tumour has not reappeared again, as I have the opportunity to see him now and then.

Remarks.

The wonderful rapidity of the action of the medicine in reducing the tumour and doing away with it in so short time is a matter for consideration. I am not without hope and the time is not far distant, when properly selected homœopathic medicines on pathological basis will be able to demolish cancerous, or other malignant tumours at their commencement. If tissue proliferation, either homogeneous or heterogeneous in its nature, added or not with microbes be the nature of these out-growths, then up to a certain stage, I hope, it is the province of medicines to check and annihilate the morbid processes. The internal administration of radium or some other powerful metal may help us in the eradication of these calamitous diseases.

Foreign.

IRIS VERSICOLOR IN MEGRIM.

BY DR. A. STIEGELE, STUTTGART.

Translated for the Homeopathic Recorder from the *Allg. Hom. Zeit.*,
March 10, 1904.

From a very instructive article on this subject we excerpt the following interesting cases:

I. Miss B., æt. thirty-one, a teacher.

March 22d, 1903. Was always formerly in good health, but had a slight case of chlorosis, her appetite, stool and menses are normal. Since the last five months she has always felt tired, with headache almost every day; already in the morning, when she gets up, she has lancinating pain in the left temple, sometimes hammering, alleviated by rest and darkness; she likes to lay her head back; she is internally excited, morose, impatient, and complains especially of drawing pains in the neck. *Acid. picric* 6, three times a day, three drops.

May 9th, 1903. No improvement, headache every day, attended always with sour vomiting, physical excitation alternating with depression: *Iris versicol.* 3, three drops every two hours.

June 14th, 1903. During all this time she had headache only once, with vomiting: *Iris versicol.* 3, five drops three times a day.

August 3d, 1903. In six weeks she had one light attack of megrim without vomiting. Her condition since has been invariably good.

II. July 2nd, 1902. Mrs. E. G., æt. forty-two years, has for years been suffering from frequent and very violent attacks of megrim, always attended with sour vomiting. She has tried all manner of remedies and treatments. At last in a clinic at Prague she tried Charcot and Feret's celebrated four-weeks' treatment with *Bromine*; also without avail. Now she has given up trying. *Iris versicol.* 3, at once brought her relief; her attacks diminished both in frequency and in intensity, the vomiting ceased entirely. The patient, contrary to my direction, would only take the remedy when she had an attack, and was so well pleased with the result, that she could not be induced to use it systematically.

III. Frederica R., æt. nineteen years.

Nov. (Sept.) 26th, 1903. Since she left school (probably since her period of development) she has had headache every other day. It begins with a flickering before the eyes, then there are severe

pains in the left temporal region, followed in a few hours by sour vomiting. The anamnesis showed, that when a child she had milk-scab, which was "cured" with local remedies. Her general health is otherwise good, menses regular, but always somewhat retarded : *Iris versicolor* 3, five drops three times a day.

October 31st, 1903. Is doing well. In five weeks she had headache only one, without vomiting. Same prescription:

Later on I had the patient under my treatment for other slight ailments, and could determine that she had no further attacks of megrim.

IV. E. K., eight years old.

May 21st, 1902. The father came with his boy to my office and stated that the boy every six to eight weeks had attacks of bilio-mucous vomiting, the egesta having a very strong sour smell. Such attacks generally last two days. He has suffered from these attacks from his early years. Before these attacks the boy complains of headache. The appetite is slight, stools now and then inert, the sleep is frequently disturbed.

An examination showed no organic changes except severe reflexes of the abdomen. The urine was free from sugar. *Iris versicol.* 4, three drops morning and evening.

July 24th, 1902. Has had no attack since. Repeated.

The patient has remained free from these attacks to this day.

In this case the stomach symptoms and those of the bowels were most prominent, and the boy was brought to me on that account. Such cases do not seem exceptional. So Délécourt reports in the *Journal de Bruxelles* of July 11th, 1903 (as cited in *Münchener Med. Wochenschrift*, No. 44, 1903, on page 1934) concerning the cyclical vomiting of children :

"Cyclical vomiting with children is a peculiar disease, which has only been described since a few years. Marfan emphasized acetonaemia and acetonuria as the leading symptoms. Délécourt in some typical cases has not been able to discover any aceton in the urine. The following are characteristic symptoms : Vomiting occurs in irregular periods and commences unexpectedly without any assignable cause ; the end of the attack is just as sudden ; the vomiting yields to no treatment, is acid and has a smell resembling aceton. Various American authors consider the cyclic vomiting to be a symptom of gout ; they say it is the beginning of megrim. Cases are actually known in which attacks of megrim take the place of the cyclical vomiting.

"But this explanation seems unsatisfactory, though the vomiting seems to be due to a poison. Many of the young patients are neurotic. The diagnosis may prove difficult and in some cases meningitis may be confounded with it. The treatment ought to be quite simple: the children should not receive anything during the attack, not even the sugar-water recommended by Marfan; two or three times a day they should receive per rectum an infusion of a seven per cent. solution of common salt. After the attack the patient should be nourished carefully with milk, eggs, vegetables, white meat, etc. He should drink only water or alkaline water, neither beer nor wine. Every week he should receive a teaspoonful of Karlsbad salt in half a tumblerful of lukewarm water, and every morning a teaspoonful of glycerine in water. This treatment has proved very successful."

Quite a waste of detail and self-magnifying polypragmasy when compared with the simplicity of the practice under the law of similars where all at once therapy creates a change of affairs while at the same time it clears up the case to its diagnosis.

In Clarke's Dictionary of Materia Medica a similar case is reported:

"A girl, nine years old, had periodical attacks of vomiting every four to six weeks, occasionally only every four months. Each attack lasts three days. It begins with the vomiting of the ingesta, then acid fluids and at last yellow and green bile; great heat in the head, fever and exhaustion; the exertion causes hot perspiration to break out. A single dose of *Iris* removed the attack, while all remedies used before had been ineffective."

V. The following case merits attention because it shows the close relation existing between megrim and epilepsy:

M. D., twelve years of age.

November 28th, 1902. The aunt of the girl stated that the patient had been suffering from attacks for half a year. The girl loses her consciousness, falls down and begins to throw her limbs about. Such an attack lasts about a quarter of an hour, and the attacks come about three times a week. On closer scrutiny I found out that the girl was illegitimate and the mother addicted to drink. The girl says she suffers much from headache, especially in the occiput and in the forehead; the pains are aggravated before an attack. The appetite is moderate, *everything she eats becomes sour*. Frequent sour vomiting. *Iris versicolor* 3, five drops three times a day.

Dec. 29th, 1903. No attack has occurred. Owing to a heavy pressure in her chest (an abortive attack?) she could not speak for half an hour at one time. The food in her stomach still turns sour. She still complains of headache. Repeated.

Jan. 23d, 1904. In the beginning of January there was a temporary obscuration of consciousness; there are no more convulsions, no more pressure in the chest, the food does not sour in her stomach any more, the headaches have diminished in frequency and violence. Repeated.

Feb. 12th, 1904. No more attacks; headache now and then.

There is no necessity of assuming that there were suggestive influences acting as causes in the reactions of the cases described.

Personally I always avoid anything tending in that direction; nor is suggestive therapy very brilliant in its successes in the sphere of megrim; nor is the reaction a new thing, but it is a matter of old experiences in homœopathic therapy. My purpose in this communication is merely to again point to this remedy so reliable under the given conditions. I think it necessary to state that the cures reported are not, as is sometimes the case, a comforting selection from many cases treated in the same manner and unsuccessful but every case treated showed a positive success.

According to Farrington none of the remedies in megrim so decidedly exhibit the sour vomiting as *Iris versicolor*. ("Everything in the stomach turns into vinegar," the prover reports.) I believe this clinical phenomenon may be acknowledged as a leading characteristic.—*Homœopathic Recorder*, May 15, 1904.

Gleanings from Contemporary Literature.**THE FUTURE OF LONDON MEDICAL EDUCATION.***Delivered to the Medical Society of London.*

BY SIR ISAMBARD OWEN, M. D., F. R. C. P.,

Vice-Dean of the Faculty of Medicine of the University of London.

SOME years ago I met a distinguished foreigner on his first visit to London. He said : "What a strange people you are in England ! Your country has given birth to some of the greatest leaders of modern thought. Had we been fortunate enough to call them compatriots, their monuments would have been conspicuous in our towns, the public places of our capital would have borne their honoured names. I have traversed London," he pursued, "without once being reminded that was in the country of Darwin and of Spencer ; the name even of Newton met my eye only at the corner of a back street off Holborn."

I did my best to explain the apparent paradox. I traced in detail the principles of English street nomenclature : I urged the probability that Newton of High Holborn was not the author of the *Principia*, but a local builder ; I pointed out that a London statue was the very last form of memorial a philosopher would wish for ; but my companion went away only half satisfied, and left me, to speak frankly, as unconvinced as himself.

One cannot in candour deny that the contrast is somewhat odd between the commanding position in the history of science which England owes to the labours of a few of her gifted sons and the attitude of comparative indifference which the mass of contemporary Englishmen display, I will not say merely to the personal fame of their illustrious pioneers, but in general to the entire question of the advance of scientific knowledge within their bounds, and to the development of the means of national education which that advance demands.

Elsewhere in civilized Europe we are made conscious of a franker public recognition of the change that the last century made in the conditions of the modern world ; of the extent to which cultivation of exact knowledge has revolutionized the requirements of public and private business ; and of the obligations and necessities which the new order of things has imposed on the community. Elsewhere than among ourselves it is not thought a strange thing that the resources of a State should be employed to extend the bounds of abstract knowledge ; elsewhere we see the organization of education no less an object of government than the ordering of the police or the control of the highway. Even incomparatively poor countries we find scientific knowledge and trained intellects regarded as sound public investments, and the popular voice applauding a liberal application of public money to secure them.

May we not say that the time has come when England should make up its mind whether the Continental view of the requirements of the age is right or wrong ? If it be right, one cannot without concern view the extent to which this country has lagged behind. At present England speaks with uncertain voice and mind. She evinces no real conviction of the practical value of scientific knowledge or scientific training. Science is lauded to the skies in words and left to starve in fact. Research is commonly treated as though it were a matter of merely private ambition or concern. Commerce and industry are still in doubt whether any more scientific training is necessary for their employes than sufficed a century ago. In questions of public education, except as far as they may concern a point of religion, the generality of Englishmen hardly affect an interest.

The prevailing note of indifference belongs to no particular class or section. The country squire who regards schools as an insidious means of undermining agriculture may be matched by the industrial magnate who frankly despises all technical knowledge gained outside the workshop. The Minister who with difficulty consents to make a public grant for research has himself to wrap its object in some specious guise of "utility," lest the popular voice should condemn it as a dole to a privileged class.

In the matter of public education, halfheartedness has led us into a course of wasteful as it is illogical. For thirty years past, at a vast expenditure, we have been educating the entire population up to a preliminary stage, and providing no means for those who show themselves capable of it to proceed further. If a national system of education is to produce a national advantage worth the money it costs, its aim must surely be largely a selective one. The ultimate object, from a statesman's point of view of national education is to bring the best brains of the country, or, to speak more precisely, the best combinations of brains and energy to the front; to bring them into the positions in which they can be turned to the best account in the national struggle for supremacy. In England we have stopped at the first stage, the most costly and least remunerative. We have produced year by year a mass of educable material and made nothing further out of it. Whatever individual talent the elementary school may have revealed, we have taken no care to ensure its after-development. We have laid a costly foundation and built nothing upon it. Can we wonder that so many Englishmen regard national education as a failure, and speak of it as a device to convert useful workmen into unnecessary clerks? If it be not so in fact, it is not the fault of the policy that has been followed.

To all this there is a significant exception. John Bull's carelessness about science and education stops with the shore. When he has to deal with his own chosen element, the sea, he is altogether another man. In nautical matters no one values exact knowledge more; no one, unless, perhaps, his recent pupil in the Far East, has more assiduously cultivated scientific methods or been more careful of the training of the men to whom he entrusts his destinies. We need not, therefore, commit the absurdity of supposing indifference to science to be any permanent feature of the English character. It is but a passing phase, the origin of which we may discern in patent historical causes.

THE CAUSES OF NEGLECT.

Great Britain entered on the Victorian era under peculiar advantages. Previous rivals in Europe had been exhausted by long wars which had brought us no greater disaster than increased taxation; America was still almost a negligible quantity. Our early use of coal and the mechanical inventions to which it had given rise had aided in giving us a long start of our contemporaries in the modern world which those inventions were bringing into being. Other nations might claim superiority in the graces of life; in commerce, in industry, in material civilization generally, the United Kingdom for many years was easily ahead of them all. We fancied, perhaps, that this was to last for ever. Other nations had painfully set about the task of organizing their resources, systematizing their knowledge, trying to make the most of the human material they possessed; we had, we thought, no need to do the same; our natural energies and superior aptitude would always keep for us the supremacy we had gained. In matters of education England no less enjoyed during this period a pre-eminence it has been difficult for her to forget. The Universities of the Continent had long been in a state of decay, material as well as intellectual. The last relics of the great mother University of Paris, that had once ranked in authority with Pope and Emperor, had disappeared in the Revolution; of her half hundred of colleges, nearly all had vanished. The collegiate foundations

of Oxford and Cambridge, on the contrary, had steadily grown in opulence and lost nothing of external splendour. In the middle of the last century Oxford and Cambridge, to say nothing of Eton and Winchester, were as far in advance of anything of the kind elsewhere as the commerce of the Thames or the industries of Lancashire. As was natural, Englishmen grew to regard their two ancient seats of learning as the type universities of the world, and the particular kind of education prevalent there as the ideal of what University education should be. Universities elsewhere have since multiplied and gathered resources; economic causes have diminished the income of our once wealthy colleges; but England is slow to realize the new situation. The appeals for help which Cambridge has been lately making to its wealthy alumni are passing almost unregarded, and the great majority of Englishmen would still, I believe, be surprised to be told that, measured by contemporary European to say nothing of American standards, neither Oxford nor Cambridge would be reckoned among first-class Universities.

Whether it be that we forgot, in the later years of the nineteenth century a familiar apologue, whether it be that we had grown into the habit of relying too much on our natural advantages and neglecting the means of improving them, or thought that the world would stand still for us, certain it is that of late we seem to have awoke rather suddenly to the disagreeable fact that in some of the departments of the world's business in which we thought our supremacy most secure we are being overtaken, and possibly distanced, by countries that we scarcely regarded as rivals a generation ago. It is not only that the tortoise shows signs of overtaking the hare; the new world, we begin to find, has bred a hare at once fleet and more persistent than ourselves. Now perhaps one may hope that a hearing will be given to those who have long been speaking to unwilling ears and calling attention to the neglected state of national education in the heart of the empire. We have long had it pointed out to us with what heed these matters were regarded in Continental countries; how carefully their educational systems were thought out; how liberally even poor nations were voting money for educational purposes; but to all this little attention has been given, these things being apparently regarded as necessary only for the foreigner. Will Englishmen be equally careless of what is being done in the United States and in our own North American colonies? Americans can hardly be set down as a second-rate people, or an unpractical race, or an unsuccessful one. It may be that London will not disdain to learn something from them. There was published in London a few weeks back the report of the Mosely Educational Commission to the United States, the second of the two Commissions which Mr. Alfred Mosely dispatched at his own expense to endeavour to trace the cause of the success of Americans in their competition with ourselves. The Commission included twenty-six men prominent in the British educational world. The reports they sent in run to 400 closely printed pages and every page is interesting reading. The contents may well startle this country, if anything can, out of its apathy with regard to the matter.

Everything, let me say at once, is not represented as perfect in American education. The Commissioners found much to criticize in American educational methods, in their lack of thoroughness in certain directions, in a general tendency to underpay the *Personnel*, and in a certain disposition on the part of private benefactors to regard buildings and sites as of more importance than men. But these, it is frankly admitted, are faults of immaturity and over-rapid growth; the greater part of the American educational institutions are barely a generation old. Nor did the Commissioners find that thoughtful Americans were in the habit of looking on education as the source of their prosperity. That they were disposed rather to attribute to the inherent qualities of their composite and selected race.

But, what was more significant, they regarded the national interest in education as the natural expression of the very qualities that made them successful, and were confident that if their public education had not been the cause of their prosperity, it was an essential condition of their prosperity being maintained.

American interest in education is not of recent origin. The practice of appropriation of public land to educational purposes by act of the Federal Government dates from the early years of American independence; and the most extensive measure of this kind was passed in the crisis of the civil war. Up to the year 1900—as may be learned from the educational reports prepared for the Paris Exhibition—the United States Government had in this way assigned upwards of eighty-six million acres, an area larger than the whole of the United Kingdom, out of the public domain for the support of education. The total value of federal education grants in land and money to the same year, the land being valued only at its original selling figure, is stated by the same authority to be nearly sixty millions sterling. This, it will be understood, is the grant of the Federal Government alone, and has nothing to do with the contributions and levies of the separate States and their cities. Private benefaction has been on a still more remarkable scale. Private gifts and bequests for university education alone, says one of the Mosely Commissioners, have amounted to forty millions sterling in the course of thirty years. Fourteen millions sterling is given by one of the 1900 reports as the sum of the private benefactions of the single year preceding to universities, colleges, schools, and libraries. Mr. J. D. Rockefeller and others are said to have spent four millions on the University of Chicago, and other recent foundations are reported to be still more royally endowed. Harvard, at the present time, draws an annual income of nearly or quite two hundred thousand sterling from private benefactions. Though medicine is as yet the least favoured and one of the most backward branches of American education, the special gifts to it are still far from contemptible. The medical department of the Columbia University of New York, for example, is endowed, including land and buildings, to the extent of £496,000, the site and buildings of the Jefferson Medical College of Philadelphia are valued at £120,000; and a recent benefaction to the medical department of Cornell University in the State of New York is rumoured to amount to £300,000. An imperfect return shows an aggregate of three million sterling of property enjoyed by medical education throughout the States, and during the five years 1894-8 private gifts to medical schools are reported as exceeding half-a-million sterling, being about a sixth of the benefactions made to hospitals during the same period.

Of the universal American interest in public education, of the profound belief in the value of public education that possesses all classes in the States, every chapter of the Mosely reports is eloquent. Public bodies, we are repeatedly told, grudge no money spent on education; the claim of educational institutions to the best sites, the best buildings, the best appliances that can be obtained, is regarded as incontestible; moneyed men are everywhere prompt to recognize the needs of education, industrial concerns are eager to secure the most highly educated men for their employment. The development of public education in the States is still going actively forward and by all appearance will do so for many years to come.

It is sad to compare with these glowing pictures of educational progress the history of the twenty years of wasted opportunity and effort we have lately known in London, the twenty years of wearisome agitation, of interminable inquiries, of reiterated deputations, of bland official replies, of municipal and public apathy, that we went through before we could get so much as the bare framework of a teaching university in this, the richest city of the world. May we hope that in the twentieth century

London will turn its eyes to see what these vigorous young communities in America are doing and that we shall not have to wait twenty years more before our hard-earned frame is clothed with living material.

THE SPECIAL CLASSES OF MEDICINE.

In this country, at least, no form of higher education can claim a stronger title to public support than medical education. Its purpose is the interest of all. Disease and accident are no respecters of time and place; the life of the wealthiest may at any moment rest upon the skill and knowledge of the humblest village practitioner; failure at any point of the sanitary guard which in times of danger preserves a nation from epidemic disease may let in an enemy that will cost the country more than it could ever spend upon its medical schools. The medical profession is not one that can be charged with making a selfish or illiberal use of its knowledge. In all things it has loyally consulted the public advantage first of all. It is a profession of whose voluntary generosity the public never scruples to make unsparing—I had almost written unblushing—use, a profession which meets the heavy demands made upon it with unfailing patience and public spirit. I shall hardly overstate the fact if I assert that a fifth of the entire population of London has at one time or another, in the hour of distress, learned to rely on the public or private charity of the medical practitioner. Medicine, which gives so much and so readily, may surely ask a little in return, and expect in all honour that its claims will be ungrudgingly met.

If the claim that medicine is about to make on the inhabitants of London has gone unrecognized till now it is not altogether the public fault. Medicine has perhaps desired too much to be independent and self-sufficing; we have not taken the public sufficiently into our confidence as to the needs of our art; we have troubled too little to see that it was adequately informed. The average non-medical person, it is safe to say, knows at the present day far less of what goes to the making of the medical practitioner than he does of almost any other form of professional education. The developments of medical education during the last quarter of a century have not been trumpeted abroad, "written up" in the press, or made the subject of magazine articles. Of the London hospitals the London public knows much; of the schools of medicine that have grown up alongside of them almost nothing. It would probably surprise the great majority of Londoners to learn that the mere buildings of these schools would in the aggregate suffice for the needs of many a renowned university, that upwards of four hundred teachers are actively engaged in connexion with them, and that the curriculum pursued in them is at once the most arduous and the most highly systematized form of education that exists in the country.

The foreigner would be no less astonished to hear that the entire system has been the result of private effort, and that until lately it has been entirely self-supporting. The buildings appropriated to its use in University and King's Colleges are almost the only public assistance it has to acknowledge; private liberality has hardly gone beyond the foundation of prizes and exhibitions. With the exception of certain professorships at University College, there is not at the present moment a single endowed chair in any medical school in the metropolis. Like many other institutions in England the London School of Medicine was not founded—it grew spontaneously in response to a need. It grew up in close connexion with the twelve great general hospitals, but till lately it had cost them nothing; on the contrary, they were pecuniarily the gainers by it. I ventured some six years ago to estimate that the existence of the medical schools virtually added no less than £50,000 a year to the charitable resources of London, and I was not accused of exaggeration.

The endowment of a single professional faculty to the extent of some £24,000 a year, exclusive of premises and library, would seem in London the dream of a rather distant future ; but that is the extent to which, in the neighbouring capital of France, the Faculty of Medicine appears to be subsidized from public sources. The statistics of higher education issued by the Ministry of Public Instruction for the ten years 1889-1899 show that in the last year reported on (1897-8) the sums assigned to the purpose of the Faculty amounted to 1,466,212 francs, of which only 859,302 francs were recouped from students fees, leaving 606,910 francs, say £24,276, to be provided from public sources, chiefly the coffers of the State. The expenses of the Paris Faculty do not, it may be added, include those of instruction in what we term the "preliminary sciences."

MODERN REQUIREMENTS.

A complete endowment of the Faculty of Medicine is not at present in question in London. We see no reason to apprehend that the schools of the London hospitals will be less able in the future than in the past to provide for their own resources for the professional education of as many students as their ample hospitals can accommodate, but there is a strong and growing sense of the need of relieving them from the increasing pressure of a burden which at the present they are under the obligation of supporting, but which is properly none of theirs to bear.

The medical curriculum has long since everywhere divided itself into two nearly separate portions, the one mainly professional, while the other tends more and more to become purely academic. It is within my own recollection and that of many here that the student of other days, while still pursuing his ordinary anatomical and physiological studies, in some cases while working only at the introductory physical and biological sciences, was expected or encouraged to spend a part of his time in the wards and out-patient rooms of his hospital, and to familiarize himself thus early with the aspects of disease. That is now virtually at an end. The increasing requirements of the earlier parts of the curriculum have rendered it impracticable. The contemporary pupil, though nominally attached to a hospital, pursues as a general rule the first two years, or three as the case may be, of his curriculum under almost purely academic conditions, and rarely enters a medical or surgical clinic for any serious purpose until he has surmounted the barrier of his anatomical and physiological examinations.

I need not stop to discuss whether the change of practice is of unmixed advantage or no. Something, it will doubtless be said, is lost in the present day which the older and less differentiated plan of education was able to impart ; but this, I fear, is a profitless question to raise. The present system is universal, or nearly so ; it has forced or is forcing itself by the logic of circumstances on every seat of medical education alike, and it must be taken as one of the facts of the case that we have to deal with.

In almost every place of medical education except London a further differentiation has already taken place. The responsibility of providing for the earlier portion of the curriculum has ceased to rest upon the medical school properly so called. In Lancashire and Yorkshire, in Birmingham and Newcastle, and in Wales, endowed universities and university colleges have taken this part of the work upon themselves, leaving the schools of medicine, in the strict sense of the term, to their proper task of teaching the theory and practice of medicine and surgery, and such of the more advanced branches of science as cannot conveniently be separated from clinical work.

In London, without a central teaching authority to assist, lead, or co-ordinate the scattered educational agencies at work in her vast area, this further step has till now been impossible. The medical schools, unendowed

and without external aid as they are, have had to bear the burden of the preliminary education themselves. Each separate school in order to maintain its position, has found itself obliged to offer a medical curriculum complete in all its parts, academic as well as professional, and to provide the buildings, laboratories, and external teachers necessary to make it so. Until London possessed a university in fact as well as in name, no practicable way out of the difficulty could be seen, and the difficulty has been a steadily increasing one. While politicians disputed whether five millions of population should have two titular universities or only one, whether professors of European fame should be dealt with as honourable men or objects of public suspicion, and how far the laying of academic hands on the London Matriculation Examination would endanger that palladium of British learning, the men who were actually doing the work had to strain every nerve to meet the constantly growing requirements of the long medical curriculum, and to keep the London schools of medicine on a level worthy of their historic fame. The work was done. It has, I venture to say, been well done ; but the strain on the schools has been no light one, and its tendency is still to increase. Over the schools hangs the shadow of the ominous question, How long can the present strain be maintained ? A limit will be reached, it must be plainly said, unless London awakes to some sense of its responsibility in the matter. And while London is asleep, the provinces are moving. I trust I shall not be understood as saying one word in dispraise of the excellent teaching given in many of the provincial medical schools, or in derogation of the highly distinguished physicians and surgeons who are working so ably in them ; but the fact nevertheless remains, not only that London possesses an unexampled field of clinical instruction, but that, as long as the greatest prizes of the profession are to be found in the capital, the tendency must be for the best clinical talent in the profession to be attracted to the metropolitan hospitals and schools.

THE SOLUTION OF THE QUESTION.

It would, I will not hesitate to say, be a disaster, not only to Londoners but to England and Wales as a whole, if London should ever lose the position it has hitherto held as the chief seat of medical education in the country. It is to the grave discredit of so wealthy a capital that such an event should be even imaginable.

Thanks to the reconstitution of the University of London we have at last a definite plan to lay before the public. It is a plan which has been drawn up by the Faculty of Medicine of the University, a body fully representative of medical education in the metropolis, and which has been officially adopted by the Senate of the University as an integral part of its scheme of future development. It is proposed to found, as part of the University of London and under its direct control, a public Institute of Medical Sciences to undertake teaching in physics, chemistry, biology, anatomy, and physiology for the purposes of medical students. The classes of the institute will not be limited to those only who are undergraduates of the University and propose to take its degrees. Provision will equally be made by the University for the instruction of students who are aiming at the College diploma or the license of the Apothecaries Society. Nevertheless, all who enter the institute will be studying in the University in fact as well as in name. They will be able to commence their career by entering directly at the University, and until they have completed their classes in the institute they will not need, unless they wish, to join a hospital at all. They can wait till they have finished the academic part of the curriculum and select their hospital when the time has come for them to begin their clinical work. No compulsion will, of course, be exercised by the University over existing medical schools. Any that may find it to

their advantage still to carry on the earlier as well as the latter part of the curriculum will be at liberty to do so; those whose policy is otherwise will be able to receive their clinical students directly from the University of London Institute as now they receive them from the Universities of Oxford and Cambridge and the University College of Cardiff.

The University is willing and anxious to establish such an institute; but to do so funds are, of course, needed, and funds for the purpose the University as yet has unhappily none. How much, it will be said, will be required? That has been the subject of careful estimate. Assuming the institute to be started as contemplated for 500 students at the outset, and assuming—as is not impossible—that a free site can be obtained, it is reckoned that £160,000 would be sufficient for the necessary buildings and equipment, and that the annual expenses on staff and service would not exceed £20,000, of which about two-thirds would be recouped by fees, leaving to be provided from endowment between £6,000 and £7,000 a year, which brings the total capital endowment estimated as required to £375,000.

To what quarter is the University to look for this necessary sum? On the Continent of Europe it would at once be recognized as a legitimate charge on the State. In our country that can hardly be. The tradition that professional education is no affair of the State is still deeply rooted in England. Even the modest subsidy annually granted by the Treasury to the English Colleges is given under proviso that no portion of it shall be used for the purposes of the medical school. On State aid we can count but little. In America, if we may judge from the accounts lately brought back by the Mosely Commissioners, the matter would also be speedily settled. Our Chancellor would need but to sally out, pay some half dozen judiciously planned morning calls, exercise the persuasiveness which he is universally allowed to possess, and the thing would be done. Have we no wealthy men in London capable of being fired by emulation of transatlantic gifts to education, who will make this modest benefaction their peculiar care? As we lately learned with so much gratification, a most auspicious beginning, at least, has been made. May we trust that it will be followed by speedy fruition, and that the list of subscribers already privately started will be covered without needless delay? Among them, one may safely predict, will be found not a few members of our own profession; but it must be clearly remembered and understood that it is no personal interest or advantage of the profession that is being sought. The object is in the fullest sense one of public concern, and it is to the public, not to the medical profession, that the appeal of the University is particularly addressed.

It would be a poor compliment to a University destined, as we hope, to a great academic position to let it be supposed that this introductory work is all that the Faculty of Medicine will eventually expect from it. At present it is our most urgent need, but there are more ambitious fields of work awaiting the University later. The idea that the principal duty of a University is the education of undergraduates, and that a bachelor's degree is the climax of a University career, is among the fading traditions that the nineteenth century bequeathed to us. In the United States the more advanced school of educationists already begin to regard the teaching of undergraduates as but a secondary function of a University, if indeed they would admit it to be a University function at all. The preparation of candidates for initial degrees they are disposed rather to relegate to a class of institutions of subordinate rank which in America are called "colleges." The real work of a University, it is argued by many, that to which the attainment of an initial degree is only an introduction. "Graduate study," as Americans call it, is already with them a prominent feature of education, and even seven years ago, according to the reports

already quoted, twenty-three American institutions were able to make up between them a total of 4919 resident graduate students, an average of nearly 214 each. The medical world in England has recognized the importance, and indeed the necessity, of graduate study, and the number of members of our profession pursuing it in London in one shape or another would probably exceed anything that is to be found in America; but the provision which have been able to make for it would, I fear, have to sustain a far less flattering comparison. It is certainly not yet so complete as to place any serious difficulty in the way of its absorption into the organization of the University, or to render the co-operation of a powerful University with it other than welcome. With the aid of the University we may perhaps one day see removed the weakness of the London system that has always been most apparent to foreigners: I mean the entire dependence of the academic position of a medical teacher upon the term of his hospital office, with the unavoidable result that some of our greatest clinicians have ceased to teach at the very time when their experience is ripest and their judgement at its greatest maturity.

May I venture, in conclusion, to deprecate a certain note of impatience, that occasionally makes itself perceived in the medical world because the development of our University is not proceeding at as rapid a pace as we could wish? We must not expect impossibilities. To make up the arrears of two generations in a great capital was as huge a task as any University could have had committed to it, and some of the difficulties in the way have been very hard to surmount. That the constitution of our University is not an ideal one, that it may be open to the charge of cumbrousness, I, at least, am not concerned to deny; but machinery is of less importance than man; and we need not complain over much of a constitution that has committed the interests of our science to such strong and able hands as those of the representatives it has upon the University Senate, and placed at the head of our Faculty a man so singularly capable as its present Dean of grappling with the difficulties of the present situation. The best compliment we can pay to the statesmanship and the self-sacrificing labours of Mr. Butlin and his fellow-workers in our behalf is, I submit, to give them a patient as well as an earnest support.—*British Medical Journal*, May 21, 1904.

A CONTRIBUTION TO THE STUDY OF THE ACTION OF INDIAN COBRA POISON.

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On special duty for Snake Venom Research, under the orders of the Secretary of State for India. Communicated by Professor Sir THOMAS R. FRASER, F. R. S., Received January 18,—Read February 25, 1904.

(Abstract.)

Previous Work on the Subject.

Brunton and Fayer discussed the pharmacology of cobra venom at some length; they attributed the effects of the poison to its action on the cerebro-spinal nerve-centres, especially on the respiratory centre. They observed that cobra venom had a direct action on cardiac muscle, and that it also affected the heart through the vagal system but they did not lay much stress on circulatory failure. They surmised that the high and maintained blood-pressure of a cobraised animal was due to arteriolar

constriction, but did not attempt to explain how this was brought about. Amongst the many other points of interest they took up, was the influence of artificial respiration in cobraism.

Cunningham in the 'Scientific Memoirs by Medical Officers of the Army in India' urged the opposing theory that cobra venom acted on respiration through the blood and not through the nervous system.

Weir Mitchell and Reichert carried on Brunton and Fayrer's views. Their paper was mainly concerned with the venoms of other snakes than the cobra. They thought two factors were at work on the rate of the heart, viz., an increased activity of the accelerator centres, quickening the beat, and a direct action on the heart slowing it. They attributed the primary fall in blood-pressure to depression of the vaso-motor centres, but thought it might be partly cardiac. The rise they considered "capillary" and the final fall cardiac.

Bagotzi laid great stress on the rôle played by nerve-end paralyses (especially phrenic), and disputed Brunton's views that respiration was attacked through the medullary centre. He did not find any action of the venom on the vagal mechanism. He surmised that death with a tightly contracted heart, the result of very large doses of venom, was due to a cardiac action.

C. J. Martin in the article on snake venom in 'Allbutt's System of Medicine,' considers that, in cobra-poisoning, the circulatory mechanism is not easily affected, and contrasts this with the state of affairs in viperine poisoning. He found that vagal stimulations stopped the heart up to near the end of life in cobra poisoning.

Object of this Research.

This was to accurately ascertain the precise part played by the various important centres, nerves and organs in the production of death from cobraism.

Methods employed in the Research.

1. *Perfusion of the frog vessels was carried out with solutions of cobra venom in each case of various strengths.*—The central nervous system had been destroyed first.

The strength-limitation of the venom on the arterioles was carefully studied.

2. *Perfusion of frog hearts was carried out with solutions of cobra venom of various strengths.*—The isolated hearts were perfused in Schafer's plethysmograph, and blood mixture was employed as the vehicle for the poison. The strength-limitation of the action of cobra venom was again determined here. Certain drugs which resemble this poison in their action on heart muscle, were also experimented with, e.g., strophanthin and the sulphate of atropia. The risks apparently attendant on the use of the latter drug in cobra poisoning are pointed out.

3. *The study of the action of cobra venom on the frog heart in situ was next taken up, by means of a number of devices, which included the direct application of the poison to the medulla oblongata, which was exposed for the purpose.*

4. *Perfusion on the mammalian heart was carried out with solution of cobra venom of various strengths.*—The isolated heart was perfused through its coronary vessels with a nutrient fluid, in which the venom was dissolved. Cats' and rabbits' hearts were used.

5. *By means of kymographic tracings, the blood-pressure, respiratory movement, etc., of cobraised rabbits were recorded and studied.*—The activity of the vaso-motor mechanism was studied, in various stages of cobraism, by stimulations of the depressor and sciatic nerves, the vagi were cut, likewise at various stages, and their ends were also stimulated, in order to ascertain the part played in cobraism by the vagal inhibitory

mechanism; injections of a solution of sulphate of atropine were also made, and the effects were observed. The author received much help in this section from Drs. Sillar and Prentice.

6. *A similar set of experiments to the last was carried out on dogs and cats, plethysmographic tracings of intestinal volume were also included here, in order to study the changes, if any, going on in the splanchnic area circulation.*

7. *The movements of the auricle and ventricle were studied in cobraised cats and dogs by removing the front of the chest parietes and attaching the auricular and ventricular walls (by means of hooks and silk threads) to levers recording on a kymographic apparatus.—The blood-pressure in a large artery was also frequently taken by means of a plethysmograph. At various stages the vagi were divided or stimulated, and the results observed. The effect of giving further doses of cobra venom with the vagi, intact or divided, was also studied. The condition of the vagal nerve-ends received close attention.*

8. *By kymographic experiments the influence of artificial respiration on the centres, nerve-ends, etc., of cobraised animal was carefully studied.—The experiments were varied in different ways.*

9. *The direct action of cobra venom on the respiratory centre of rabbits was tested by applying the poison to the exposed medulla oblongata.—A stethograph recorded the respiratory movements, and the blood-pressure was at the same time taken on the kymograph.*

10. *Several series of experiments were undertaken to ascertain the part played by the phrenic and other nerve-ends in producing the respiratory complications which are seen in cobraism.*

Summary of Conclusions.

1. Cobra venom acts directly on the muscular tissue of the blood vessels, or through their vasomotor nerve-endings, constricting the arterioles, and thus raising the arterial blood-pressure. It probably affects all organs alike. In the frog vessels the action can be traced down to dilutions of 1 : 10,000,000. In a cobra-bitten man, the concentration of venom in the blood is probably at least thirty times as great as this.

2. Cobra venom also acts directly on the isolated frog ventricle, killing it in a position of firm systole, if the solution be concentrated, and stimulating it if a weaker strength be employed. The limit of the speedy lethal action on the isolated heart is reached at a concentration of about 1500,000. The stimulating action can be traced down to a dilution of 1 : 10,000,000. This action of cobra venom brings it into line with the glucosides of the strophanthin group. Its action is more rapid than that of strophanthin, and is certainly not inferior to it in strength. Atropine sulphate and cobra venom, when acting in the same solution, intensify each other's action, and produce more summation of effect than one would have anticipated. This detracts from the value of the atropine salt in the treatment of cobraism, and makes it a dangerous remedy. The blood-pressure work has confirmed this view of the case.

3. Cobra venom powerfully affects the isolated mammalian heart, when solutions of it are perfused through the coronary circulation. The action appears to be a dual one, *viz.*, (1), a direct action on the muscular fibre, or on the nerve-endings, closely resembling that which is produced on the isolated frog ventricle; and (2), an action on the intra-cardiac vagal mechanism, which makes for inhibition. The result is that, in strong solutions, we find an irregular and extreme excitation of the heart, followed by early death in a position of systolic tone. If the concentration be less the early stage of excitement yields to a prolonged phase, in which the tonic action of the poison on the heart is most pronounced: the beat is regular, steady and strong. Cobra venom interferes with the circulation through the heart

in a marked manner ; this is probably due (1) to a constriction of the coronary vessels brought about by the direct action of the venom on the vessel walls, and (2) to the condition of tonus into which the heart is tending to pass.

4. When given subcutaneously in low lethal doses, cobra venom kills by paralysing the respiratory centre. Such a paralysis is under these circumstances gradually evolved, and in early stages of the process, there is often evidence of a phase of stimulation preceding the parietic phase.

There is a gradually increasing venosity of the blood, and in consequence thereof all the harmful results of slow asphyxiation are produced.

If life is prolonged beyond the usual term by artificial respiration, and possibly also if the dose of venom is a very low lethal one which takes many hours to kill, the phrenic and other motor nerve-ends may become paralysed, but this is certainly not an essential feature of death from lethal doses of cobra venom, which kill within five hours. I hope to make a farther communication on this subject later.

The convulsions which precede death are purely asphyxial, and can be at once stopped by artificial aeration of the blood. Each such convulsion is followed by a phase of exhaustion of the respiratory mechanism, which is almost certainly central.

If the dose of cobra venom administered be a large one, and especially if it be given intravenously, the respiratory centre is quickly and severely affected, and respiration may cease almost at once. This cessation of breathing may be permanent, if artificial respiration be not quickly started but if the dose be a smaller one the rhythmic activity of the centre re-asserts itself. At first there may be a number of deep spasmodic gasps, and then the movements of respiration re-begin, very gently at the commencement, and gaining force as time goes on, till a normal rhythm is re-established, or even a stage of stimulation is manifested. Soon, however, the centre fails again, and all the phenomena of asphyxiation appear.

By applying cobra venom directly to the exposed medulla oblongata of the rabbit, I have shown that the respiratory centre can be paralysed without the phrenic nerve-ends or the heart being appreciably affected.

If very large doses of venom are injected, death may take place by cardiac failure, before the respiratory mechanism has given way. We have here to do with the direct action of the venom on the heart muscle ; the beats become rapid, and shortened, and the heart passes into a systolic phase, in which it dies tightly contracted.

5. Cobra venom when given in low lethal doses subcutaneously, raises the general blood-pressure. There may be a slight preliminary fall before the rise, but often this is wanting. In the absence of farther interference the blood-pressure remains high till very near the end of life. In the asphyxial convulsions which herald death, a farther steep rise of blood-pressure takes place ; this is soon followed by a sudden and very rapid fall to death. •

The high level of blood-pressure is due to—

1. The direct action of the circulating venom on the muscular tissue of the arterioles, causing a constriction of these vessels, and thus opposing a barrier to the onward flow of the blood ;

2. The increased force of the heart beat as the outcome of the direct stimulating action of the venom on its muscular tissue, and

3. The stimulation of the vaso-motor centre as a result of the steadily increasing venosity of the blood.

The slight preliminary fall of blood-pressure, which is sometimes seen, is due to cardiac inhibition, but this subject will be reserved for discussion when dealing in the next section with the action of large doses of the poison.

The late fall in the rate of the heart beat is due to cardiac inhibition, the latter is due to several factors.

1. A gradually progressive asphyxiation is taking place throughout such an experiment ; this affects the vagal centre in common with the rest of the nervous system ; the result is a stimulation of the inhibitory mechanism, and a consequent slowing and weakening of the heart.

2. The direct stimulating action of the venom on the vagal inhibitory centre acts in the same direction as the asphyxiation of the centre.

3. There is distinct evidence that even when the influence of the vagal centre is removed, inhibition of the heart continues to progress, though in a lessened degree. The obvious inference is that the vagal nerve-ends are stimulated by the circulating venom, and probably also as a result of deficient aeration of the blood.

4. It is not improbable that a stage of exhaustion of the heart-muscle follows the early stimulative action of the venom ; and

5. Exhaustion of the heart is probably predisposed to by the strain put upon the organ, in having to work for a long period against an abnormally high blood-pressure.

We are now in a position to explain the sudden rapid fall of the curves of heart-beat rate and of blood-pressure, which usher in death at the close of one of these long experiments. An over-strained and weakened heart is suddenly and violently called upon to bear a farther burden, for respiration has ceased and the medullary centres are acutely asphyxiated. As a consequence there is a violent excitation of the cardio-inhibitory and vaso-motor mechanisms. The heart is slowed and at the same time has to work against a suddenly increased pressure, and it gives way. In fact we have the phenomena of asphyxiation in their entirety.

The vessels of the splanchnic area are affected *pari passu* with those of the body generally, and they in nowise act independently. The vaso-motor mechanism remains active throughout, and is, as we have seen, profoundly affected by changes in the venosity of the blood.

6. Cobra venom, when injected in large doses and especially when given intravenously, causes—

(1) a sudden fall of blood-pressure ;

(2) a subsequent rise, provided the dose has not been too large ; and

(3) a final fall to zero.

The early fall is undoubtedly due to inhibition of the heart. It has been clearly shown that this is mainly brought about by the direct action of the poison on the vagal centres in the medulla oblongata, as it occurs before the accompanying failure of respiration has had time to act. Moreover, it is seen whilst artificial respiration is being actively carried on, and can be checked under these circumstances by division of the vagi.

On the other hand, there can be no doubt that asphyxiation of the vago-inhibitory centre intensifies and maintains the inhibition which direct influence of the venom on the vagal centre produces.

The spontaneous recovery of respiration, of the application of artificial respiration, has a powerful influence in mitigating the action of the venom on the vagal centre. In the same way artificial respiration, and to a less extent the spontaneous recovery of respiration, appear to act beneficially on the poisoned respiratory centre.

Even if the heart is cut adrift from all central vagal impulses, whether direct or indirect, by the division of the vagi, there yet remains evidence of a continued inhibition which must be attributed to the direct action of cobra venom on the terminals of the vago-inhibitory mechanism. This action would appear to be a direct one, but there is every probability that it is indirect as well, in other words that it acts through asphyxiation of the vagal terminals, as well as by the poisoning of these parts by the circulating poison. There is, however, another factor which must not be lost sight of, *viz.*, a direct exhaustion of the heart muscle as the result of irregular over-stimulation.

(2) When the secondary rise of blood-pressure, which follows the primary fall, occurs, it is due to the same factors which determine its occurrence when small doses have been injected. It remains to explain why it is sometimes absent, brief or ill marked. The explanation is simple; it is merely a question of cardiac failure. We have seen that the direct inhibitory action of the venom through the vagal centre is capable of overcoming the tendency which the blood circulating through the heart muscle has to throw that muscle into death in systolic tone. Were it not for these two rival forces to some extent equilibrating each other, cobra poison would kill by its direct action on the heart muscle. When the doses are comparatively small, or when the vagi are cut or thrown out of gear by atropine, we find the tonic cardio-muscular influence of venom in evidence, but when the doses of venom is a large, and especially when it is intravenously given (the vagi remaining intact), the inhibitory action overpowers the muscular excitation, and failure of the heart occurs. If the inhibition is sufficiently well marked, no amount of arteriolar spasm that occurs will compensate it, consequently the blood-pressure falls.

When the dose of venom is a very large one, the direct muscular stimulation may be so intense as to overcome the maximum inhibitory impulse, and then the heart dies in systole with a quickened beat and is found after death as hard as a contracted *post-partum* uterus. Under such circumstances, any increase in the force of the heart is temporary, for the beat is

probably a very partial one, the heart passes through a stage of excitement into one of increasing systolic tonus, in which the contractions are very limited in extent.

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In conclusion, I desire to express my indebtedness to all who have so ungrudgingly helped me in my work. I owe my thanks to one and all, of Sir Thomas Fraser's and Professor Schafer's assistants, but especially to Drs. Sillar, Carmichael and Hering, who were always willing to aid me in any way in their power. Messrs. Burnett, Jolly and Locherby, who gave up much of their time to work regularly for me as volunteer assistants, did excellent work throughout, and I most gratefully acknowledge that, but for their aid, the work could not have been done in the time.

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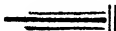
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THE
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[VOL. xxiii.] **August 1904.** [No. 8.]

COMMON DISEASES AND THEIR TREATMENT.

IV

(Continued from Vol. xxiii, No. 7, p. 276.)

The excruciating pain in an organ or muscle which suddenly ceases to reappear elsewhere, forces to infer that it has a transient nervous character, not amounting to congestion or inflammation. The constant headache accompanied with painful pressure at the nape of the neck, lacerations in the whole spinal marrow, from the occiput to the sacrum leads to the contrary inference that the brain and spinal cord are partially congested.

According to Higgins the hæmorrhage has a dark purple red colour. Clarke remarks, "*Elaps* is distinguished from the other serpent venoms by the pre-eminent blackness of its discharges and hæmorrhages; black ear-wax."

In Mitchell's experiment with *crotalus* on a dog, the hæmorrhage was very dark. With that of Sieveking on a guinea-pig the aorta contained dark fluid blood.

Eryngium aquaticum, according to Allen, has cured "seminal-emissions without erections, day and night after injuries." It has the following symptoms: Desire suppressed, then excited, with lewd dreams and pollutions, discharge of prostatic fluid from slight causes; emissions without erections day and night followed by great lassitude, after injury to testicles. It is said that *Eryngium aqua.* has more symptoms on the left than on

the right, and *Eryngium maritimum* has the pre-eminent possession of the right side.

Eucalyptus produces pricking, then aching in arms and legs, with fulness in veins, and a stiff, weary sensation as if too lazy to move. It has cured soreness of the heel by excessive use. The arteries and veins are within the range of its influence.

Eugenia jambos, the Malabar Palm-tree of India, during the proving reproduced the painfulness in an old wound from a thrust.

Eupatorium perf. causes general soreness of the whole body, specially of the neck, back and limbs, producing an aching in bones with soreness of the flesh. It is generally used in fevers having those characters. Other uses will not be out of place having in view those symptoms.

Euphorbium is capable of producing inflammation of long bones, specially of thigh. The aggravation is at night, for this reason it is used in caries and necrosis of bones attended with burning pain. Burning pains in different parts of the body has led to its use in gangrene, ulcer and cancer. *Euphorbium* is the resinous juice of *Euphorbia resinifera*. Its allied species *Euphorbia heterodoxa* also serves the same purpose.

Ferrum met. has been proved indifferently without differentiating the symptoms of the three forms, aceticum, carbonicum, and metallicum. The pathogenesis of the three have been mixed up together. The exact symptoms of *Ferrum metallicum* remains unknown.

The use of the lotion of Sulphate of Iron in all kinds of inflammation is known to be an old practice. The presumption is that the Sulphate salt is dissolved in water and the combined influence of iron and Sulphur is manifested. Whatever may be, it is a well known fact that iron has influence on the circulatory system. It can not be doubted that the principal pathogenesis of *Ferrum met.* is general anæmia. Its intensity may go so far as to produce anæmic bruit of the heart. The proving of Petruschky supplies us with the following information.

"Previous to his taking the iron, his blood was bright red, containing an inconsiderable number of small, colorless blood-corpuscles. After swallowing the iron, the blood was dark-red, the blood corpuscles were deeply colored and had sharp edges; the blood coagulated less readily than before proving, and the serum was of a more deep yellow color."

The inference is that the leucocytes increased than before producing a tendency to the exosmosis of blood, through the

arterioles. Hahnemann's remarks thus show the injury by the continued use of chalybeate waters :

"In such localities there are few persons who can resist the noxious influence of the continued use of such waters and remain quite well, each being affected according to his peculiar nature. There we find more than anywhere else chronic affections of great gravity and peculiar character, even when the regimen is otherwise faultless. Weakness, almost amounting to paralysis of the whole body and of single parts some kinds of violent limb pains, abdominal affections of various sorts, vomiting of food, by-day or by-night, phthisical pulmonary ailments, often with blood spitting deficient vital warmth, suppression of the menses, miscarriages, impotence in both sexes, sterility, jaundice, and many other cachexias are common occurrences."

With this picture roughly portrayed by Hahnemann, many other symptoms are added to complete the whole array of facts. Haemorrhage is a character of Ferrum. The metal may be said to be an analogue of Arnica with regard to their action on the circulatory system. The same exosmosis of the plasma and the blood corpuscles forms their affinity. It may be said that Ferrum should be a help to Arnica after its usefulness has ceased. The additional strength to the circulatory system is required in many cases, whether the haemorrhage is due to injury or not. In that sense, any kind of inflammation requires the aid of Ferrum for the final absorption of the exuded blood. Good efficacy has been derived from the use of the metal at that particular time, to remove the last trace of inflammatory exudation.

Ferrum muriat. has mechanical injury to the shoulder joint with rheumatic lameness. It is used as a medicine for rheumatic pain of the shoulder joint. But in injury of the same joint it should have a trial.

Ferrum phos. produces swelling of the elbow from sprain. The regional selection of the two medicines F. mur. and F. phos. is distinctive. F. mur. prefers the shoulder joints. F. phos. attacks from the deltoid muscle to the wrist and fingers.

Ferrum sulph. or our *हिक्कास* is available everywhere in India. For this reason, it is widely used in malarious fevers and passive hæmorrhages. The anti-inflammatory action of the medicine is also well known by the quacks of this country. It has successfully cured chronic inflammation by the administration of the crude drug in one or two grain doses. In my allopathic days a case of chronic inflammation of the right leg was accidentally cured. The man was suffering from chronic

malarious fever with enlarged spleen. Goodeve's Spleen powder, consisting of Quinie Sulph. grs. II, Ferri Sulph. gr. I and Pulv. Zinziberis grs. II, were given to him. He had had Sulphate of quinine alone in large doses. That did not produce the desired result. The spleen powder cured his fever, enlarged spleen and the chronic inflammation of the leg. The last recovery was beyond my anticipation. I ascribe the reduction of the chronic inflammation of the leg to Ferrum sulph.

Fluoricum acid. is a well known medecine for whitlow. It produces redness, heat and pain in skin; cicatrices get redness around the edges; and violent jerking, burning pains are confined to a small spot. In inflammation of cicatrices its use is desirable.

Formica rufa has been used in rheumatism. It has also cured bruises with the following indications given by Hering: "Burning pain, burning from washing; removed burning from cold washing."

Gloucinum has the power to check the evil caused from the bad effect of too much riding or driving, sea sickness or any condition produced after too much jarring. In this connection there is pain in the whole spinal column, which is affected by heat and chilliness.

Gossypium herb. affects the inflammation of the labia, even tending to suppuration.

Granatum produces bruised pain in shoulders and between them, as after a heavy load, even the clothing is oppressive, and pain as from a sprain in the instep. Great lassitude and fatigue, specially in the legs, sometimes with inability to remain standing, and want to lie down is one of its marked generalities.

Graphitis is mostly a medicine for diseased skin and nails. Allen writes of them thus: Inflammations at the roots of the nail, with tendency to exuberant granulations (Arnica). The finger-nails become rough and discolored. The toe-nails become extremely thick and hard. According to Clarke, Hirsh, of Prague, derived benefit by using Graphitis locally in cases of diseased nails. A detailed consideration comes under Onychia.

Hamamelis like its protagonist *Calendula* is generally considered a medicine for external use. Indeed they have been rarely or ever used internally to allay inflammation caused from sprain or contused wound. They are accepted as local applications in lacerated wound. *Hamamelis* has bruised feeling in upper arms and shoulder worse from motion; sore pain in femur, muscles of thighs sore, as if bruised; and soreness of femoral

vessels in the middle of the thigh. Allen is disposed to remark, "Varicose veins on the extremities, with soreness (it lacks the bruised feeling of Arn)." Clarke says: "No remedy has a wider sphere of usefulness in cases of hæmorrhage and disordered blood-vessels. It has also a desired relation to the effects of mechanical injuries including burns of the first degree, and as a local application it takes rank with Arnica and Calendula in the homœopathic armamentarium. Hering, who learned its properties from Mr. Pond of 'Pond's Extract' fame (Pond was a patient of Hering's) made the first proving and introduced the remedy to homœopathy. He defines the position as being between Acon. and Arn. 'Pond's Extract' is an aqueous distillate prepared from the leaves. . . . Hale has given a very full account of the remedy. Phlebitis; varicosis; hæmorrhoids; venous hæmorrhages—these are the conditions likely to require *Hamam*. The local application of *Hamam*. to a sprained knee has been known to set up inflammation in the veins of the part, and the provers who had varicose veins experienced in them increased sensitiveness and unusual sensations, and a number were cured." The evidence is on the side of the local use. However, we can not infer that its internal use may produce effective action in sprains and contused wounds. The same thing may be said with regard to Calendula. They come to be properly considered as remedies for lacerated wounds.

Hepar Sulphuris Calcareum is an impure Sulphide of Calcium prepared by Hahnemann by burning the white interior portion of oyster shells with pure flowers of Sulphur in a crucible. Before him *Hepar Sulph.* was nothing but Sulphide of Calcium. With regard to the preparation Clarke writes: "*Hepar* of Hahnemann is not identical with ordinary Sulphuret of lime, being prepared with oyster shells, instead of ordinary lime, in a special way. Neither is it identical in composition or properties with *Calcium Sulphate* (Gypsum) of Schussler. Being a chemical combination of *Calcareo Carb.* and *Sulph.* it has some of the properties of both, but is very different from either, and though it is useful to compare them, *Hepar* must be studied as a separate entity."

It is true that *Hepar* of Hahnemann is neither Calcium sulphide nor Calcium sulphate. But it may be said that it is almost Calcium sulphide. I use Calcium sulphide instead of *Hepar* of Hahnemann and the former gives me the identical result of the latter.

In the treatment of inflammation, *Hepar* has a marked place. According to Allen it is a remedy for "General inflammations and blisters, which threaten to suppurate, and in which there are sharp suppurative pains." Guernsey's keynote is great

sensitiveness to the slightest touch. The general belief is that Hepar can reduce inflammation as well as hasten suppuration. It has also the effect of the absorption of pus. In short it is considered that Hepar has multifarious actions; firstly, in the resolution of inflammation, secondly, in hastening suppuration thirdly, in the absorption of pus, and fourthly, it helps the bursting of the abscess. Clinical testimony on behalf of each of them is not wanting. We are now concerned with its power of reduction of inflammation. Can it not be questioned, whether Hepar does resolve an inflammation in its first stage, that is, long before the appearance of the tendency to suppuration? Does Hepar help the endosmosis of the exuded liquor sanguinis, containing plasma and the blood cells? I am inclined to deny that power of Hepar, in this stage of inflammation before the threatening formation of pus. Hepar may be double or a treble aged weapon, but those powers are reserved to be exercised when the process of suppuration is about to set in.

The formation of pus in even the smallest quantity gives it a scope to work; otherwise the medicine is helpless. It may be said that when it can help the absorption of pus, it can also help the absorption of the exudation. The clinical evidence is otherwise. The leucocytes which form the essential element in suppuration are not absorbed in the first stage when they act as phagocytes. Unless they lose their power as destroyer of the microbes, they are not acted on by Hepar. The defeat in the struggle for existence of the white corpuscles in their war with microbes, supplies a help to their reconversion as leucocytes of power. The defeated leucocytes with change in their appearance and form as debris of the proper leucocytes, cannot regain that power. They either form a caseous mass by the help of Hepar or burst, letting out the pus. At any rate, it can be asserted from clinical evidence that Hepar is a medicine which can work when pus has formed even in a small quantity. Here we have the opinion of Hempel and Arndt. They say in *Calcarea Sulphurata* as follows:—

“In the treatment of abscesses and of suppurating surfaces, Hepar Sulphuris has been used with good effect. But it should be stated, that these disorganisations are terminations of some anterior pathological process, which when considered in its totality, may point to and require some other remedy for its cure.” Clarke, Hoyne and others supply us with cases of suppuration. It is not stated by any reliable authority that Hepar has power like Aco., Bell., or Merc. in resolving an inflammation, before the commencement of suppuration. Threatening suppuration is the condition when the process

of formation of pus has actually commenced. It is the beginning of that morbid state. The only use of Hepar where there is no suppuration, is "every little scratch suppurates." The frequent tendency to suppuration is the marked pathological character which leads to the selection of Hepar.

In chronic inflammation of any tissue Hepar has a place. That condition is a most complicated process, involving the three stages, inflammation, suppuration and ulceration. It can not be said that chronic inflammation is the primary stage of simple exudation of liquor sanguinis. The series of successive changes have already ensued. Hepar is of use in the chronic condition, specially when glands are involved.

Hippozæninum or *Mallein* is a nosode of glanders and farcy. Glanders means when the disease is noticeable by catarrhal symptoms. Farcy conveys the idea that the skin and the lungs are chiefly affected. The virus of farcy in attenuated doses is useful in psosas and lumbar abscesses, before and after suppuration. General prostration and considerable emaciation are attended with other symptoms. It is a virulent poison and the selection for its application is required in abscesses which are due to any severe morbid effect.

Hypericum has the following symptoms: Fugitive laming pains in face, shoulders, limbs and fingers; aching in nape and upper part of shoulders (trapezius); consequences of shock or fright; prevents lockjaw from wounds in soles, in fingers and in palms of the hands; after a fall, slightest motion of arms or neck extorts cries; flesh sore, feels bruised all over; injuries to parts rich in sentient nerves, especially fingers, toes, and matrices of nails; mechanical injuries, wounds by nails, squeezing, hammering of toes and fingers; especially the tips of the fingers; when the nerves have been lacerated, wounded, torn, with excruciating pains; lacerations when intolerable, excruciating pain shows nerves are severely involved; next to the nervous tissues, the joints are affected; sensation as of being lifted up high into air; frequent biting stinging in toes; cervical vertebrae very sensitive to the touch; consequence of spinal concussion; violent pains and inability to walk or stoop, after a fall on the coccyx; aching pain and sensation of lameness in the small of the back; effects of running nail, or pain into foot. Allen limits its use in following cases: "The result of penetrating wounds from pointed instruments. Effects of gunshot wounds concussion of the brain and spine in a railroad accident, followed by a large number of symptoms, worse between scapulæ, stiffness of extremities, etc. In a general way it is indicated for the effects following injuries of nerves. In general, excessive pain.

fulness and soreness brought on by change of weather. Many cases of subacute and chronic neuritis have been apparently cured by its use."

Further on "spinal tenderness, with paroxysms of terrible pain, screaming if approached (Arn); in other cases, great sensitiveness of cervical vertebræ to touch with dyspnœa, short hacking cough, etc."

Hempel and Arndt write thus; "In nerve traumatism hypericum is a most useful medicine; hypericum is to the nervous tissue what arnica is to the muscular tissue; whence its frequent use in the treatment of the severe pain which occasionally follows surgical operations, resulting from injury to some nerve or nerve filament."

Clarke says: "One of the provers had on waking at 4 A.M., a feeling as though she were suspended and not lying in bed, at another time as though she were lying very heavy in bed. The former condition has led to cures in effects of accidents attended with the sensation as if being lifted high into the air; and great anxiety lest she should fall from this height. The particular kinds of wounds for which *Hyp.* has been found of signal service are wounds of parts rich in nerves, brain, spine (spinal irritation from falls), coccyx, finger ends; wounds from stepping on nails, or any punctured wounds."

The above remarks lead us to infer that *Hypericum* is useful in concussion, compression, shock, or contused wound, without producing punctures or lacerated wounds. It is a medicine for any kind of inflammation mostly due to injury of the nervous tissues. What *Arnica* is to the muscular tissues, *Hypericum* takes the same place with the nervous tissues, including brain, spinal cord and nerves.

(To be continued.)

ANCIENT EGYPTIAN RESEARCHES ON THE
CIRCULATION.*

BY RICHARD CANTON M.D., F.R.C.P.,

Consulting Physician, Liverpool Royal Infirmary.

To all who love our venerable and beneficent profession the spectacle of our predecessors in early ages striving in darkness and difficulty to acquire that hidden knowledge to which we have partially attained is interesting, and should awaken our sympathy. As was remarked by the learned Harveian Orator of 1896, "The past is worth our study, and ever more so the further we advance."

The information which archaeological research has of late afforded, though in a fitful and partial manner, as to the earliest history of medicine, and particularly in regard to that department in which our founder laboured, is not unworthy of our attention.

The first evidence of definite inquiry, in any degree worthy to be called scientific by a body of men specially educated for and devoting their lives to medical service, occurs in the early history of Egypt. The ability, learning, and artistic skill shown during the early dynasties, which all Egyptologists recognize, is paralleled by the remarkable interest then manifested in medicine. Works on anatomy and medicine are stated to have been written even by the early Sovereigns of Egypt. Athothis, the son of Menes, who lived 6,000 years ago, is stated in the Berlin Papyrus to have written a book on medicine, and I shall soon have to quote from the anatomical writings of the Pharaoh Usaphais, one of his successors: Senti, the seventh monarch of the same dynasty, pursued similar investigations. It is clear, that, like the Greeks these men in the childhood of the world believed that Sanitation was to them the first of the sciences.

* Dr. Canton's Hunterian Oration on "Egyptian views as to the circulation and rest in valvular disease" is published in the *British Medical Journal* June 25, 1904. The first portion of the oration is so interesting that we have not hesitated to give a prominent place in our *Journal*.—*Ed. Cal. J. Med.*

The Medicine God, I-em-hotep.

During the third dynasty, about the year 3,500 B. C., there lived a learned physician, probably a priest of Ra, the sun god, the founder of a cult, whose eminence was such that in course of ages he is deified, and becomes for later generation the special god of medicine.

His temples were places of healing for the people. His name is I-em-hotep, meaning "he who cometh in peace." According to ancient inscriptions he was the son of a certain architect named Kanofer, but when raised in popular esteem to the rank of a demi-god he is called the son of the supreme god Ptah, the Hephaistos of Egypt, and he becomes one of the great god-triad of Memphis. I-em-hotep is described as the good physician of gods and men, a kind and merciful god, assuaging the sufferings of those in pain, healing the diseases of men, giving peaceful sleep to the restless and suffering : he is called the creative god who giveth life to all men, who comes unto them who call upon him in every place, and who gives sons to the childless. He was great in magic and all learning. He and his followers had to do with the embalming of the body, and he protected the soul of the dead man from all spiritual enemies after it had left the body. In the ritual of embalmment the dead man was encouraged by these words "thy soul uniteth itself to I-em-hotep, while thou art in the funeral valley, thy heart rejoiceth because thou dost not go into the dwelling of Sebek, but thou art like a son in the house of his father.

From the testimony of temple inscriptions and papyri as well as from the writings of Manetho it is clear that the temple of the medicine god I-em-hotep was established first in early times at Memphis, and there his priests carried on the work of healing ; similar temples were also erected elsewhere. I-em-hotep was represented in art as a bald-headed man, usually in a sitting posture, bearing on his knees an open papyrus scroll, and holding in his hand the symbol of life. As the centuries and milleniums passed on his cult seems to have become more and more popular. In later times when Greek colonists appeared in Egypt they gave him the name Imouthes, and applied to his temples the

Greek term "Asklepieia," clearly regarding him as alike in kind to the Greek Asklepios, and his temples as hospitals for the sick. The great temple stood outside the eastern wall of Memphis, close to the serapeum. Some of us who are at present to-day, when visiting the site of the temple of I-em-hotep, have naturally been impressed by the thought that on this spot, long before Asklepios, or Hippocrates, commonly called the father of medicine, were born, probably before the Homeric poems were written, before the Israelites were in Egypt, before the stone age had passed, learned men devoted themselves to the consideration of the nature of human life, strove to prolong it, to assuage suffering, and to cure disease. They studied and treated many of the ailments familiar to us, such as tubercle, leprosy, plague, anaemia, and other diseases prevalent in Egypt to-day.

Near the site of this temple, securely sealed in an earthen vessel which had been hidden in the sand, was found one of the medical papyri from which I shall quote some passages. Doubtless it belonged to an early physician who sought, perhaps during the invasion of Ethiopian or other barbarians, to preserve for mankind the precious knowledge that seemed in danger of extinction.

Necropsies made by the Egyptian Priests.

It is of some interest to note that these priests of I-em-hotep, themselves learned men, not only saw and prescribed daily for vast numbers of sick persons, but also performed innumerable necropsies. They removed the heart, large blood vessels, viscera, and brain from the bodies of deceased persons, also from the bodies of sacred animals, prior to embalmment. The heart was placed in a separate jar by itself, the remainder of the viscera in a larger vessel, thus these men had an opportunity of learning something of anatomy; they may have gained some insight into the intricate problem of the action of the heart, the movement of the blood, and the changes of heart and vessels produced by disease; no nation of antiquity had such opportunities. Did they discover anything? I think I can demonstrate to you they did obtain a partial knowledge of the circulation; they did not

solve the problem, but they approached it as nearly as did the Greeks and probably from them the Greeks obtained such knowledge as they possessed in early times.

References to the Circulation in the Medical Papyri.

Certain of the contents of the medical papyri are at present almost incomprehensible on account of the difficulty of translating technical terms ; these parts I shall not refer to at all ; those portions which are more easily understood still present difficulties, and translations must necessarily be free and at times vague ; where the sense is important I have had the help of one or two of the most learned living Egyptologists ; and here I must express my acknowledgments to Dr. Budge, Professor Kurt Sethe, Dr. Brugsch, Dr. Joachim, Dr. Leemans, Dr. Withington, Dr. Sandwich, Mr. Garstang, Professor Carrington Bolton, and others, for help orally or from their writings, without which, in my ignorance, I should have done little. Let me read you one or two extracts from the work of the Pharaoh Usaphais quoted in Ebers's papyrus, "Man hath twelve vessels proceeding from his heart, which extend to his body and limbs, two vessels go to the contents of his chest, two vessels go to each leg, two to each arm, two vessels go to the back of the head, two to the front of the head, two branches go to the eyes, two to the nose, two vessels go to the right ear, the breath of life goes through them, two go to the left ear and through them passes the breath of death, they all proceed from the heart." The concluding sentence is the earliest example I know of the ancient superstition that the left side of the body is sinister and evil. This is very early anatomy professing to be at least 6,000 years old, we must not expect it to be quite accurate. Turning to a comparatively recent period, the only copy existing of Ebers's papyrus (found in a tomb at Thebes) was written in or before the sixteenth century B. C. ; no doubt most, if not all, its contents are much older than that date : the passage which I am about to read commences thus, "From the secret book of the physician, a description of the action of the heart and of the heart itself. From the heart arise the vessels which go to

the whole body : if the physician lays his finger on the head, on the neck, on the hand, on the epigastrium, on the arm or the leg, everywhere the motion of the heart touches him, coursing through the vessels to all the members" (the reference is clearly to the pulse), "thus the heart is known as the centre of all the vessels. Four vessels go to the nasal chambers, of which two convey mucus and two convey blood ; there are four vessels within the temples or skull, from these the eyes obtain their blood : the four vessels divide inside the head and spread towards the hinder part." The Berlin papyrus speaks of the division into thirty-two vessels within the skull, and implies that air traverses, at any rate, some of them. Returning to Ebers's papyrus—"When the breath enters the nostrils it penetrates to the heart and to the internal organs, and supplies the whole body abundantly," this idea that certain of the vessels convey air you will observe is identical with the Greek conception and probably was its source. Three vessels traverse the arms and extend to the fingers : three vessels also pass down the leg and are distributed to the sole of the foot ; a vessel goes to each testis, and one to each kidney. Four vessels enter the liver conveying fluid and air ; these may be the seat of various diseases, as they are mixed with the blood. Four vessels convey fluid and air to the intestine and spleen ; two go to the bladder, and from them the renal secretion is produced. Four vessels convey fluid and air to the lower abdomen, going to the right and left sides ; from them is formed the alvine excretion." These vessels here described are clearly the iliac arteries and veins. "When the heart is diseased its work is imperfectly performed ; the vessels proceeding from the heart become inactive, so that you cannot feel them" (no doubt this is a reference to changes in the pulse) ; "they become full of air and water. When the heart is dilated the vessels from it contain effete matter. If a suppurative or putrefactive disease occur in the body" (abscess, I imagine, for which various localities are suggested) "then the heart causes it" (apparently the septic material) "to traverse the vessels ; fever or inflammation of various kinds occurs in the body ; the heart is in a morbid

state while the fever continues. In heart disease there is either disturbance of the action of the heart, or the heart is congested or over-filled with blood: the heart is moved downwards, comes nearer the precordia, and suffers weakness and nausea. When the disease affects the base or lower mass of the heart there is shortness of breath, the heart is displaced on account of the volume of blood from the abdomen" (probably the old idea of the rush of blood entering the heart from the liver). "There may be fever or inflammation of the heart." Now comes a passage of some therapeutic interest, "The heart during such disease must be made to rest to some extent if it be possible." Here we have wise advice from the ancient Egyptians, advice, the importance of which we have scarcely as yet recognized, and which we may to-day follow with advantage. "If the heart is atrophied (or wastes itself) there will be an accumulation of blood within it. When the disease of the substance of the heart is accompanied by dropsy there is a lessening (in strength probably) in the ventricle or cavity. When the weakness of the heart is due to old age there is dropsy. When there is raising or increase of the heart, it presses towards the left side, it is increased by its own fat and is displaced, there may be much fat contained within its covering or pericardium. If in a suppurative disease the heart is pushed forward, it floats or sinks in the fluid and is displaced." Here we surely have a reference to pericardial effusion. "If the heart trembles or palpitates, has little power, and sinks downwards, the disease is advancing. When there is much beating at the precordia, with a feeling of weights, when the mouth is hot and languid and the heart is exhausted, the disease is a fever or inflammation." In another place (folio 102) the heart is spoken of as being full of blood, which comes or flows from it again. In folio 39, after a description of symptoms, follows a statement to the effect that the heart is distended, the sick man is short of breath, because the blood has stagnated and does not circulate." This is an interesting expression, but judging from other parts of the papyrus the word translated circulate can only have a vague meaning, implying movement to and fro,

just like the expression in the Hippocratic writings, which seems to imply the circuit of the blood, but in reality has only a similar indefinite meaning. It is evident that the Egyptian knew that blood flowed from the heart, but like the Greeks they never seem to have realized that the heart is a pump, nor did they recognize valves.

The Leyden medical papyrus speaks of a paralysis or disturbance of some sort in the blood vessels of the head, causing blindness and disorder in the body and in the limbs: this seems to be a description of the results of cerebral haemorrhage. Remedies are suggested to subdue the vascular activity occurring in certain diseases.

The various papyri from which I quote, deal, of course, with practical medicine, and not with physiology: no distinct definition as to structure or function is to be looked for in them, only as associated with diagnosis, prognosis, or treatment do we get statements as to the nature of the heart, the vessels, and the movement of the blood.

Importance of Medicine and Sanitation of Ancient Egypt.

It is clear from the study of these medical papyri that medicine advanced considerably among the Egyptians, and from them medical and sanitary knowledge has descended to us by two channels, namely, by the Greeks and through the Jewish race, while probably much of it was lost irrecoverably. Josephus quotes from Manetho a statement that Osarsiph, who Josephus says was the great Hebrew leader Moses, was a priest at Heliopolis, where medicine was taught. It is highly probable that the sanitary laws of the Jews were derived from the Egyptians. Just as the Jews remembered the diseases of Egypt (Deut. xxviii, 60) so they also remembered the sanitary and remedial measures they had learnt there.

Those of us who have seen in the later excavations at Knossos the evidences of sanitary knowledge of a somewhat high type, possessed by the Cretans at a remote period, exemplified by drainage pipes scarcely excelled by our own to-day, knowing, as we do, the close connexion between Crete and Egypt, may

well believe that here we have an example of sanitation derived from Egyptian sources.

In England we have overlooked the importance of Egypt as a primary source of the science and art of medicine. If we regard with reverence the dim traditional form of Asklepios as a founder of our art, and the Asklepieia where throughout Greece and Magna Græecia medicine was practised and taught, in greater degree should we reverence the much more venerable I-em-hotep, and view with interest the primæval medicine temples and hospitals of Egypt. In the ancient writings of the Pseudo Apuleius, Hermes is described as speaking to the youthful Asklepios as follows: "Thine ancestor the first discoverer of medicine hath a temple consecrated to him in the Libyan mountains near the Nile, where his body lies; while his better part, the spiritual essence, hath returned to the heavens, whence he still by his divine power helps feeble men, as he formerly on earth succoured them by his art as a physician."

Probably many of the present audience have seen in the Cairo Museum the sepulchral stele of Shemkhetnankh, a great physician of the fifth dynasty, who was contemporary with King Sahura, and who is described in the stele as the Principal Physician of the Royal Hospital. His name, which is doubtless a title given to him by the monarch, means "he who possesses the things that give life." It is interesting to find that five thousand years ago a hospital should exist associated with and under the patronage of the Pharaoh, and having its own staff of physicians. And it is manifest that our calling held a distinguished position at the time when art and learning in Egypt were at their zenith.

Testimonies as to I-em-hotep.

I-em-hotep rises before us as one of those intellectual giants who take all knowledge for their province. In his comprehensiveness he surpasses Leonardo da Vinci, or our own Linacre. He is distinguished as a physician, a minister of the king, a priest, a writer, an architect, an alchemist, and an astronomer; great in all, but greatest in medicine, in the view of Egypt he

is a god. In the reign of Torsothros, of the third dynasty, some five thousand years ago, we meet with the wise I-em-hotep in an inscription referring to the seven years of famine which befell Egypt in consequence of a succession of low Niles. He is there the adviser of Pharaoh, to him the king applies in his trouble for counsel and help. In the inscriptions in the temple of Edfu he is described at length as the great priest I-em-hotep, the son of Ptah, who speaks or lectures, perhaps his discourses or lectures were on medicine, elsewhere he is described as the writer of the divine books. It may here be remarked that probably Ebers's papyrus was one of the six divine books attributed to Thoth ceremonially, but not improbably in large part the work of I-em-hotep. Manetho, while speaking of his eminence as a physician, refers to him also as an architect, the first to build with hewn stone. Not improbably he built the step pyramid of Sakkara, the tomb of his patron Torsothros. Manetho also suggests that I-em-hotep improved and completed the hieroglyphic script of Egypt. In the Hermetic literature he is famed for his knowledge of astronomy or astrology; the Westcar papyrus describes him further as an alchemist and magician; these powers were always associated with medicine, and even to-day in the popular view are not entirely dissociated from it.

What share I-em-hotep may have had in these early discoveries of the movement of the blood we do not know; it does, however, seem clear that the Egyptians had discovered certain elementary facts, and knew as much as the Greeks, as much as we find in the Hippocratic writings or in those of Aristotle and the later Alexandrian school, and the hypothesis seems a natural one that the knowledge possessed by the Greeks was acquired from Egypt.

Methods employed by the Egyptian Physicians.

I may mention, in passing that although the medical papyri which have come down to us are no doubt only an insignificant fraction of those possessed by the Egyptians, we nevertheless find in them abundant reference to medicine and surgery. In the Kahun papyrus obstetrics is dealt with. Gynaecology, also

ophthalmology, materia medica, and dentistry are dealt with in others, and even veterinary medicine was treated of in a papyrus, a fragment of which was found by Professor Flinders Petrie.

As regards materia medica the Egyptians possessed the following drugs : Lactuca ; various salts of lead, such as the sulphate, with the action of which in allaying local inflammation they were well acquainted ; pomegranate and acanthus pith as vermifuges, peppermint, sulphate and acetate of copper, oxide of antimony, sulphide of mercury, petroleum, nitrate of potash, castor oil, opium, coriander, absinthe, juniper (much used as diuretic), carraway, lotus, gentian, mustard, ox gall, aloes, garlic, and various bitter infusions ; mandragora, linseed, squills, saffron, resin, and various turpentine products ; cassia, certain species of cucumis, cedar oil, yeast, colchicum, nastertium, myrrh, tamarisk, powdered labis lazuli, vinegar, indigo ; the oasis onion, mastic and various gums, mint, fennel, hebanon or hyoseyamus, magnesia, sebeste (a tonic and a cough medicine), lime, soda, iron, and a great number of other agents the names of which no one can at present translate.

Surgical instruments and the actual cautery were in use, also steam inhalations, massage, ointments, plasters, poultices, suppositories, injections, and emetics, and the importance of temperature in disease was recognized to some extent.

Prescriptions were written out in due form, and sometimes at great length, fully equalling those of the most enthusiastic therapeutist of our own day. The longest prescription I have read contained thirty-five ingredients. To read it was a formidable task ; to take it I should think a perilous one. Some prescriptions are wise and rational, a few strange and repulsive ; some are associated with charms and spells. Human nature is the same in all ages ; hence one was not surprised to meet with hair invigorators, hair dyes, cosmetics, pain killers, insect powders, and a soothing syrup containing opium, for small children, in use 3,500 years ago. It was rather interesting to find that the symbol for a $\frac{1}{2}$ tenat, often used in their prescriptions, is identical with that indicating a drachm with us, though the amounts are not the same. I trust the drachm will soon be obsolete as the tenat.

EDITOR'S NOTES.

Sunshine Records.

It is interesting to consider which property of sunshine is more important to life, that of the heat-giving rays or that of the chemically active rays. Both are, of course, essential and although a person may be shivering in sunlight he may still be enjoying the benefit of the actinic emanations. They are the agencies whereby the great synthetic processes in plant life are begun and continued. They keep the machinery of nature in motion and in being, they build up food both for man and beast, and if the chemical energies of sunlight were to cease life would flicker out. Our knowledge of the chemical action of sunlight is, however, by no means complete. In some way or other the advent of sunlight increases the feeling of well-being of the individual possibly by promoting the oxidation processes of the internal economy. The circulation is improved and the condition of the blood is favourably affected by its oxygen-carrier being stimulated into activity. Vitality, in a word, is increased and the exhilarating effect of the first burst of sunshine in the spring after a dull period in the winter is a common experience. After all, it is probable that "the brighter view of things" which individuals take under the influence of bright weather may have its origin in the chemical activities of the sun. The health-giving effects of sunshine may, therefore be ascribed to the actinic rays rather than to the luminous rays of the sun. The official records of sunshine in this country refer to the duration, and not to the intensity, of the light. In other words, these returns record negatively the obscuration of the sun by cloud. On the other hand, the temperature is recorded in terms of intensity and it seems to us that similarly the intensity or chemical activity of sunlight should be recorded, for duration can bear no direct relationship to intensity. The sun might shine all day with a feeble intensity owing to meteorological conditions, haze or fog, and conversely sunshine might only favour us for an hour and in that comparatively short time exhibit an intensity or degree of chemical activity equal to a day's duration. The sunshine in mountainous places as in Switzerland is much more active chemically, as a rule, than the sunshine in the United Kingdom, although in the latter place the duration might even exceed that of the former. Amateur photographers experience this readily enough, for they find that the exposure required for the sensitised plates on a bright day in Switzerland is infinitely less than that required under similar conditions in England. In the former case the transparency of the

air is greater and the actinic rays of the sun are not out off as they are in this country. Duration, therefore, is not necessarily a synonym for intensity and thus the value of comparative records of duration for different places may be discounted when any record of intensity is omitted. No one would think of recording rainfall by its duration. The actual amount of water falling would depend upon whether the shower was heavy or light or a steady drizzle. The rainfall is therefore measured by the weight falling on a given area and it seems to us that the meteorological records should include not only the duration of sunshine but also its intensity as measured by its chemical effects. If the benefit derived from sunshine is due to its chemical energies careful records should be kept of them, especially at our health stations.—*The Lancet*, July 16, 1904,

Opticians and Spectacle Prescribing.

The following report on Sight-testing by Spectacle Makers has been issued by the Ophthalmological Society over the signature of the President of the Society, Mr. John Tweedy, P.R.C.S., Eng. :—

The Ophthalmological Society of the United Kingdom, having had its attention called to the fact that the Worshipful Company of Spectacle Makers proposes to include the subject of sight-testing in the examination for its diploma, and to give certificates of efficiency therein, wishes to express its opinion that, while approving of any measures which tend to increase the efficiency of opticians in their technical work, it considers that it would be misleading and dangerous to the public to countenance any proposal to certify as competent to advise and prescribe for defects of vision anyone who has not had an efficient medical and surgical training. A diploma such as the Worshipful Company of Spectacle Makers proposes to grant may lead the public to believe that its possessor is competent to diagnose and treat diseases of the eye, and thus grave consequences might follow.

Errors of refraction often occur in association with diseases of the eye. The mere correction of the former by means of spectacles would ignore a condition which might destroy sight, or even leave the life of the patient in danger. Moreover, many errors of refraction can only be accurately measured after the local use of a drug, which should only be accurately employed or prescribed by a medical man, since its indiscriminate use is calculated to excite one of the gravest diseases to which the eye is liable. Finally, on general grounds it is undesirable and dangerous to encourage the public in the belief that affections of any organ of the body can be safely treated by anyone unacquainted with its anatomy and physiology, and with the various morbid conditions to which it is liable.

This, of course, is the exact position which the Lancet has always taken up. That the widespread need for reading spectacles in middle age can to a great extent be met by treatment based upon optical rules of thumb does not alter the fact that the eye is a living organ as well as an optical instrument. As a living organ it is subject to malformations and diseases which complicate, and are complicated by, its optical defects. It is impossible for anyone to deal with the latter who is not able also to appreciate the existence and influence of the former.—*The Lancet*, July 16, 1904.

Death Certification by an Unqualified Person.

At Winchester assizes a man charged as Charles Henry Hustwick *alias* Cormac has been convicted and sentenced to 18 months' hard labour for feloniously giving on the prescribed form issued to medical men a certificate of the death of a child. It was proved that the prisoner's name was not, and never had been, on the Medical Register, in spite of which he impudently asserted his innocence of the charge and boasted of having practised as a medical man for many years, having apparently at one time acted as an unqualified assistant to medical men. After the jury had given a verdict against him a previous conviction was proved for an attempt to procure abortion in Devonshire. It is to be hoped that the police will keep a watchful eye upon this person upon his release.—*Lancet*, July 16, 1904.

Symptomatology of Urosepsis.

In a paper on Urosepsis read by Dr. Ferdinand Kornfeld at a recent meeting of the Gesellschaft der Aerzte he said that the effects produced by urosepsis consisted partly of local symptoms connected with the uropoietic apparatus and partly of general symptoms due to urine poisons circulating in the blood. In clinical work the latter conditions—i.e., those of septic origin—were liable to receive more consideration than the local symptoms. When the general septic phenomena predominated the diagnosis of cryptogenic septicæmia was not unlikely to be made. In addition to abnormal states of the bladder the characteristic symptoms of urosepsis were (1) "urine fever," which might be isolated and acute, recurring, or chronic; (2) intestinal disturbances; and (3) phenomena of nervous origin. In chronic urosepsis the disease followed a regular course without fever and was marked by serious impairment of the general health with debility and emaciation but without pronounced local symptoms. Cases of isolated cachexia often belonged to this class. The cachexia, when severe, might easily be mistaken for malignant internal disease.

especially for carcinoma of the intestine, if gastric-intestinal symptoms happened to be present, such as gastric-dilatation, resistance in the pyloric region, deficiency of free hydrochloric acid, presence of lactic acid, vomiting, and intolerance of solid food. In the circulatory and respiratory system urosepsis might cause cardiac arrhythmia and irregularity without anatomical changes in the valves or myocardium, stases in the circulation, cyanosis, localised pneumonia, and localised atelectasis. In the skin it might cause indurations, infiltrations, phlegmonous ulcerations, erythema nodosum and purpura hæmorrhagica. Hæmorrhages from the urinary tract were often brought about by the great fluctuations of pressure in the urinary and sanguineo-vascular system. Free intestinal hæmorrhage occurred occasionally. In addition to serious disorders of the central nervous system hemicrania, tremors, and vertigo might be among the results of urosepsis. Cramps and paralytic seizures were relatively infrequent and only made their appearance in uræmia. In ten cases of symptomatic cachexia in which prostatectomy had been performed a long time previously Trousseau-Erb-Chvostek symptoms were observed. This form of tetany was to be referred to auto-intoxication from the urinary system. Another result of urosepsis was disordered action of the trophic nerves leading to bronzing of the skin, urticaria, abnormal distribution of perspiration, and detachment of the nails — *The Lancet* July 16, 1904.

The Psychology of Spiritualistic "Mediums" and the Dangers of "Mediumship."

Dr. Paul Sollier and Dr. F. Boissier, both of Paris, draw attention to the dangers of the practice of "mediumship" in spiritualism a condition of affairs which seems to have counted many victims in France during the past few years. In the *Archives de Neurologie* for July several instructive cases under the care of Dr. Sollier and Dr. Boissier are recorded of the ill effects produced in those who are drawn into the ways and practices of spiritualism. Charcot and Forel had repeatedly pointed out the dangers incurred, especially by young women who devoted themselves to seances and training for mediumship, many of them having developed attacks of hysterio-epilepsy, after taking part in such performances. In an attempt to explain the psychological processes of the state of mediumship Dr. Sollier and Dr. Boissier point out that an exaggerated action of the subcortical automatic brain centres and a tendency to "doubling" of the personality inevitably accompany the state of mediumship whether induced by hypnotism or spontaneously. Persons suffering

from a certain form of insane delirium are liable at times to assume the action and methods of a medium, as in a case recently reported by Ballet and Dheur. On the other hand, a medium whose brain and mind are normal to start with may, as the result of the practices of mediumship, gradually develop a proneness to hallucinations and insane delusions. Among the cases recorded by Dr. Sollier and Dr. Boissier was that of a woman, aged 36 years, the daughter of Jewish parents. She was a woman of brilliant intellect but her mind had been recently affected and her intelligence obscured by the experiences which she had gone through. Owing to neglect on the part of her husband, a dull and slow-witted man who did not understand or appreciate her, she gave herself up to moods of brooding and romance, grew absentminded, and even forgot her most important duties. At this time she met her uncle, an ardent spiritualist, from whom she imbibed the doctrines of spiritualism. Her husband did not share her views or her aspirations in regard to spiritualism, to the practices of which she now wholly devoted herself. She first suffered from hallucinations of "voices" speaking in her bosom. She then took part in table-turning and spirit-rapping and developed the habit of taking while under the influence of spirits. Her friends of the Jewish faith avoided her and, left alone to herself, she developed a host of delusions in which theological and mystical notions predominated. She evolved a system of astronomy and peopled the planets with gods, spoke of "molecules," "chemistry," and "Kamenism." This last term she invented as the name for a system of religious doctrine which she expounded. She finally developed erotic impulses and became addicted to masturbation. Wasting and weakness became prominent but under medical care and attendance she improved, although the mental instability with its tendency to see "visions" still persisted. Dr. Sollier and Dr. Boissier conclude that it is dangerous for young or uneducated persons to attempt to train themselves for mediumship and that the dangers are especially great for women who attempt to do so.—*The Lancet*, July 23, 1904.

What Constitutes Live Birth?

To the Editors of THE LANCET.

Sirs,—The definition of stillbirth, proposed by the Midwives Board and later authorised by the Privy Council, as quoted under the above title in the *Lancet* of July 9th, p. 93, should not be allowed to pass without comment. The tests applied by midwives are to be "breathing or showing any sign of life after being count-

pletely born." This definition makes stillbirth and deadbirth identical, whereas historically and not uncommonly in books and in practice these terms are opposed. The stillborn is really the silent-born child (compare "the still days" of Passion week); these newly-born children are not necessarily pulseless, that is, asphyxiated in the true sense of that word. Further, "any sign of life" begs the whole question for this requirement is an alternative far too indefinite to be allowed place in a logical definition. This easy "vagueness gives ample scope for such casuistry as was exemplified in the oft-quoted case *Fish v. Palmer* (not reported), where a full-term child was born in 1796 and was stated by the nurse to have exhibited, as a sign of postnatal life, no other token than "twice a twitching and tremulous motion of the lips"; the jury decided for its live birth. Such a remarkable test case needed severe scrutiny and verification. I decided to trace its literary history with the following result. The English text-book authors all quote it from Beck, he quoted it from Fœdere, who quoted it from *Le Moniteur*, whither it was copied and translated from *Lloyd's Evening Post* of July 15th, 1806. This was its original citation with three other identical accounts, presumably from the same pen, in three contemporary newspapers—the *Times* being silent. Since the learned reporter has long been disabled from making affidavits as to the accuracy of his report, the alleged decision must remain of very little forensic significance; indeed, it has never been cited by counsel. Decided cases, civil and criminal, show that the postnatal continuance of activity of the cardio-vascular system is the essential minimum for live birth. Mr. Justice Wright has personally assured me that he "has no objection" to the terms he is stated to have used in defining "separate existence in the theory of the law." Finally may I quote, as a curiosity, a death certificate returned in 1896 in which the subject was stated to be "aged one minute"?

Inner Temple, July 11th, 1904. I am, Sirs, yours faithfully,

STANLEY B. ATKINSON.

The Lancet, July 23 1904.

CLINICAL RECORD.

Indian.

CASE OF PNEUMONIC INFLUENZA IN THE CLINIC OF THE HOMŒOPATHIC HOSPITAL, ST. JACQUES, IN PARIS.

By DR. P. JOUSSET.

Official Therapy as established in the Parisian (allopathic) hospitals, acknowledges 147 deaths out of 199 cases in bronchial pneumonia, i. e., a mortality of almost three-quarters. In my own experience, "saith the author of this interesting article, broncho-pneumonia, whether it be a complication of influenza, measles, whooping-cough or typhoid fever, has so far shown a mortality of 0 out of 100 patients, who were over one year old."

This superiority of the homœopathic treatment is so well known that one of my friends who met a colleague, who was in despair as to the case of a child sick with broncho-pneumonia, advised him: "give him *Ipecac* and *Bryonia*, and it will get well." The child actually got well accordingly, but the father remained incurably ensnared by his allopathic prejudices.

We know how difficult it is to overturn prejudices by means of clinical demonstrations. Nevertheless, since we occasionally find an honest intelligence which is bold enough to accept the truth, even when it conflicts with previous views, we shall continue our exposition of the proofs of the superiority of homœopathic therapy by publishing our observations:

I. OBSERVATION: INFLUENZA WITH MILD BRONCHITIS.—
Ipecacuanha 6, *Bryonia* 6. Cure.

A little girl, seven years old, came to the hospital of St. Jacques, on January 3d, 1902. She was an orphan of unknown antecedents, vigorous and of healthy constitution. She had coughed for seven or eight days, but does not seem prostrated from it. The cough, which is frequent and jerky, is accompanied with pretty copious muco-purulent expectoration, in which microscopic examination fails to discover either Koch's or Pfeiffer's bacillus. During auscultation a somewhat harsh respiratory noise is heard on the right side, but this disappeared after three days. There were no results from palpation and percussion. Temperature 100.4° F., next day it sank to 99.5° and 98.6°, but it rose again on January 5 to 100.2°, and on January 6 to 100.4°. In the next days it sank again to 98.6°, and after that kept between 97.1° and 98.6°. But there are still attacks of cough: the expectoration is diminished. After

this the convalescence proceeded from day to day. This was an extremely favorable case, yielding quickly to *Ipecacuanha* 6 and *Bryonia* 6.

II. OBSERVATION: BRONCHOPNEUMONIA WITH INFLUENZA, RESEMBLING A MENINGITIS VERMINOSA.—*Ipecac* and *Bryonia*.—*Santonin*.—*Cina*.—*Bryonia*.—*Tartar. stib.*—Cure.

A little girl, four years old, was received in the hospital on December 17, 1901, in the evening. She also was an orphan, concerning whose hereditary constitution nothing could be determined. The preceding October, she has been suffering from whooping-cough. At this time she is a wretched sight. Temperature 102.2° F. Pulse 152. Paroxysmal cough, little expectoration. The girl shows considerable intelligence and says that she has now been in this state for three days.

The physical examination showed nothing characteristic; the precussion is normal; during auscultation the respiratory sounds are somewhat coarse on the right side and there is some whistling and rattling. *Ipecacuanha* 6 and *Bryonia* 6.

December 18 (7th day). Temperature, 102.2°. In the evening, 103.5; the child is very weary, wants no food, and vomits up the last of its milk. *Nux vomica* 12, five drops.

December 19 (8th day). Temperature, 101.3° in the morning; 103.1° in the evening. The general state is the same. The child has vomited and thrown up two worms. The cough is paroxysmal, dry.

December 20 and 21. The prostration continues with slight vomiting. The temperature fluctuates between 100.2° and 102.6°. The condition resembles incipient meningitis.

December 22 and 23. On the whole the condition remains the same but the fever gradually sinks to 101.7°, 101.2°, 99.5°. The pulse is always quick. On the evening of December 23d the temperature again rises to 102.2. There is but little rattling, no expectoration, in spite of the frequent cough.

December 25. After the child again vomited up a lumbrical worm, the thought became urgent that invagination might be at the bottom of her ailment. So she received *Santonin* tablets and 15.0 of *Castor oil*.

December 27. The patient received calomel, but this was thrown up.

December 28. No more worms were discharged. The temperature fluctuates between 99.5° and 102.2°.

December 29. Temperature, 100.4° in the morning; in the evening, 103.5 . The general condition the same. Auscultation shows a *fine subcrepitant rattling*, on both sides. *Cina* 3, twenty drops.

December 30. Temperature, 100.8° ; else no change. The cough is still frequent; finally some expectoration appears, containing a large number of Pfeiffer's bacilli. *Bryonia* 6, three drops.

December 31. Temperature, 99.5° in the morning; 101° in the evening. The child was very weary, takes no nourishment and vomited several times during the day. The cough is more moist, the expectoration more copious.

January 1, 1902. Temperature, 102 ; and January 2d it sinks to 99.5° , but on the 3rd it rises to 100.4° ; on January 4th it is 98.4° without any improvement in the asthenic state of the child. The rattling from small bubbles can be heard all over, but especially on the right side.

January 5. The temperature in the evening again rises to 102.6° . The child had been taking *Cina* since December 20th. This evening the child received tincture of *Aconite*, 15 drops.

January 6. The temperature was in the morning 98.6° , in the evening it rises to 102.4° . *Bryonia* tincture, three drops, and *Aconite* tincture, ten drops. The general condition unchanged according to the local examination. Still the cough is more moist and not so straining.

January 7. The temperature in the evening is 100.4° . The cough is very moist. On the right side there can be heard hoarse respiratory noises and some mucus rattling. *Pulsatilla* 6, for that and the following day.

January 8, 9, 10 and 11. The general and local condition improves, the child is cheerful, there is less rattling. The temperature varies from 98.4° at noon to 100.4° in the evening. On the 9th and 10th the patient received *Ipecac.* 6 and *Bryonia* 6; on the 10th *Tartarus stib* 6, to be continued for several days.

January 12. A complete lowering of the temperature. The child, who till now would scarcely take a cup of milk with some cake, now asks for something to eat. A slight rattling is still audible on the right side with some hoarse respiratory noises. The cough is much less frequent with little expectoration.

This observation was clinically quite noteworthy. The condition of the child was quite precarious, since the child had for three

weeks shown a temperature of 102° and 103° and the fever only fully subsided on the thirty-third day.

Two points were especially remarkable in this case. The appearance of the characteristic pulmonary symptoms, the subcrepitant rattling from the eighteenth to the twenty-fifth day of the disease while the child during the first weeks presented the image of meningitis with ceaseless vomiting, unconquerable anorexia, refusing to speak, with long-continued prostration, while the temperature in the mornings and evenings showed a difference of nearly two degrees (101.3° to 103.1°). The frequency and irregularity of the pulse in no way conflicted with the diagnosis of meningitis. Then the vomiting of lumbrical worms set in, to meet which *Santonin* and *Castor oil* were prescribed, without any success. A noticeable improvement only began on the twenty-ninth day and the fever only fully subsided on the thirty-third day.

Ipecacuanha and *Bryonia* were prescribed in the beginning, but left off on account of the cerebral symptoms. The pneumonic symptoms on the eighteenth day caused the prescription of *Bryonia* 6, and in addition that of *Tartarus stib.*, which caused the cure. The appearance of Pfeiffer's bacilli in the expectoration was most copious.

III. OBSERVATION: BRONCHO-PNEUMONIA WITH INFLUENZA IN SEVERE FORM.—*Ipecacuanha* and *Bryonia*—*Carbo veg.*—*Arsenicum*.—*Phosphorus*.—*Chinin. sulph.*—Cure.

A child, six and a-half years of age was received in the hospital, December 26th, 1901. The father is suffering from advanced tuberculosis; the brother of the child is at present in good health.

December 27. The child is very tired, the fever intense; pulse, 160; respiration, 48; temperature, 102.6°. Fine subcrepitant rattling is heard in both the lungs, widely extended, especially in the left lung. *Ipecac.* 6, and *Bryonia* 6 every two hours in alternation, in two drop doses. Milk.

December 28 (6th day). The fever has diminished. Temperature in the morning, 98.6°; the pulse still 160. The two remedies are continued. Since the asthenia is very pronounced, the child receives claret, mixed with water. Milk is refused or thrown up. Now and then it will take a few mouthfuls of cotelettes or of cake. Evening temperature, 100.8°.

December 29 (7th day). Temperature again down to 98.6°, though the pulse is still 160 and the general condition alarming; considerable dyspnoea. Local symptoms unchanged. Continued *Ipecac.* and *Bryonia* 6. Evening temperature, 102°; pulse, 172; respiration, 72. *Carbo veget.*

December 30 (8th day). The temperature had decreased but little this morning, to 100·8°. In the evening, 103·1°, but the pulse only 148; respiration very much accelerated. Asphyxia is threatened. There is continued somnolence. *Carbo veg.* 30, six globules. In the evening, again *Ipecac.* and *Bryonia*.

December 31 (9th day). T., 100·4°; P., 148; R., 72. The asphyxial symptoms have disappeared. The local symptoms are the same, only there is more rattling on the right side. Evening temperature, 101·3°. General condition somewhat better. *Ipecac* and *Bryonia*. Copious expectoration, little globules, puriform during the whole disease, bilious diarrhœa; numerous influenza bacilli in the sputum.

January 1, 1902 (13th day). General condition keeps improving. Morning temperature, 100°; in the evening, 101·1°, and on January 2, there is complete apyrexia; still the pulse remains at 136 and respiration at 72.

January 4 (13th day). Temperature, 100·8°; P., 114; R., 72. The little patient feels oppressed and always coughs spasmodically. Sputum, copious, gray. A bacteriological examination shows various microbes, among them the pneumococcus; no Koch's bacilli. Medicine continued.

January 5 (14th day). Morning temperature, 100·4°, it rises in the evening to 102·2°, dyspnœa increases. R. is up to 80. The child complains of very violent pain in the right ear. The lungs are unchanged. *Ipecac.* 1 trit., *Bryonia*, tincture, ten drops.

January 6 (15th day). T., 102·2°. Dyspnœa very intense, the pains in the ear increased. For *Bryonia* 1 substitute *Pulsatilla*, giving five drops of the mother tincture. Some *Belladonna liniment* in the ear.

January 7 (16th day). No improvement in condition; dyspnœa more severe; the face is livid; deep prostration; continual somnolence. Stools are frequent, liquid and whitish-green. Temperature 101·2°. *Carbo veg.* during the day, *Ipecac.* 1 D., 0·50 in the evening; and *Arsenicum*, 1 trit., 0·10. The asphyxiated condition had let up a little in the evening.

January 8 (17th day). Morning temperature, 99·5°; in the evening, 100·8°; P., 136; R., 72. The expression of the face is somewhat better, though the diarrhœa and the ear-ache continue: *Ipecac* and *Arsenicum*.

January 9 (18th day). Temperature in the morning, 99·5°; in the evening, 102·5°. The lungs seem somewhat improved. The cough

is severe, spasmodic and frequent. Mother tincture of *Pulsatilla* three drops; *Belladonna*, tincture, three drops.

January 10 (19th day). Temperature, 100.1° and 101.7°; P., 124; R., 76. Dyspnœa considerable, the ear-ache has diminished, a yellowish pus runs from the right ear. Diarrhœa continues. *Arsenicum*, 1 trit., 0.10.

January 11 (20th day). The temperature has sunk to 99.5°, but in the evening it rises to 102.6°. Dyspnœa is less. R., 68; P., 132. The flow from the ear and the diarrhœa continue. *Arsenic.* continued, adding *Tartarus emet.* 3 trit., 0.10.

January 12 (21st day). Condition unchanged, but R. is 80. *Arsenic.* 3 and *Tartar.* 3 continued.

January 13 (22d day). The temperature in the evening is again 101.7°; P., 146; R., 96. Diarrhœa diminishes. Instead of *Tartar.*, now *Phosphor.* 3.

January 14 (23d day). Temperature below 100.4°. The general condition is improved. The rattling noise is still heard in the lungs, but the bubbles are larger, more moist. Continued.

January 15 (24th day). Temperature, in the evening, 103.3°; pulse, 128; respiration, 84. The child now complains of violent pain in the left ear, which is then washed with *Kali hypermangan.* *Phosphorus* is continued.

January 16 (25th day). Temperature, in the morning, 98.4°; in the evening, 102°; pulse, 105; respiration, 88. *Carbo veg.* 30, six globules.

January 17 (26th day). Temperature, in the evening, still about 102.2°; pulse, 120, respiration, 72. A second abscess opens in the right ear. The lungs are improved. Diarrhœa much less.

January 18 (27th day). Respiration, 60; temperature, in the morning, 98.4°; in the evening, 102.2. The day before, the temperature had remained below 100.4° from noon till 4 P.M. *Phosphorus* 3, five globules. *Chinin. sulph.* 0.50 in two doses. Pulse, 88; respiration 60; temperature, 98.2.

January 19 (28th day). Pulse, 88; Respiration, 60; temperature, 98.2. The child is sitting up in bed, the attacks of coughing are less frequent, the sputum less copious. Only a slight rattle is now heard in the right lung, little more in the left. The flow from the right ear has ceased, that from the left ear is slight. The diarrhœa has disappeared. *Phosphor.* and *Chinin.* continued.

January 20 and 21 (29th and 30th days). The improvement continues. Temperature, in the morning, 98; in the evening, 100.8;

pulse, 116; respiration, 60. The general condition and the air-passages the same. *Arsenic.* 3. 0·10 is substituted for *Chinin*.

January 22 (31st day). Temperature, 97·7 in the morning; 99·5 in the evening. Pulse remains at 129; respiration at 60. The child is cheerful. Reconvalence has begun.

23 and 24. The improvement continues.

Epicritical remarks by Dr. Jousset: "When we consider the long continuance of the fever, here amounting to thirty-three days, the temperature which frequently exceeded 102, the dyspnœa, which is shown by seventy-two, and sometimes ninety-six respirations, and when we consider how extensively both the lungs were affected, the fact that symptoms of asphyxiation appeared twice, also the deep depression and somnolence, no one can deny that this was a most severe case of bronchopneumonia.

"The cure of this tedious case, and especially the undeniable action of the remedies on every symptom, can only be explained by the activity of the organism. * * * *

"*Ipecac.* and *Bryonia* first produced an improvement, shown by the decrease in temperature, but this improvement only lasted two days, then the temperature rose above 102·2°, while at the same time asphyxiation began to appear. *Carbo veget.* (30), continued for a day, changed this for a better state. *Ipecac* and *Bryonia*, then being resumed in the evening, again produced an improvement in the general condition and in the pulmonary symptoms, so that a solution of the disease was then to be hoped for. But the temperature as well as the frequency of the pulse, increased again. Now, *Ipecac.* in the 1 trit. and *Bryonia*, in the mother-tincture were given, lowering the temperature again for two days.

"To this was still added another complication, the inflammation and secretion first in the left and then in the right ear; this contributed not a little to raising the temperature and aggravating the condition. Asphyxia once more set in, which was again successfully met with *Carbo veg.*

"*Arsenicum* (on the 17th day) no doubt contributed to lower the fever during the following days.

"*Phosphorus* 2 finally produced a decided improvement in the last days of the disease. At this time the fever had become intermittent, but the *Chinin.* now given remained without effect. Pfeiffer's bacillus, which appeared so copiously in the beginning of the disease in the expectoration, disappeared later on, and then only pneumococci could be found.

"Blood letting. *Digitalis Tartarus stibiatus*, sometimes, however, well indicated, though given in two large doses (Dr. M.), vesicatories and other remedies recommended by children's physicians cannot show any such results, and although the treatment with alcoholic stimulants and cold compresses may have lowered the mortality in bronchopneumonia, they nevertheless remain far behind the results reached by homœopathic therapeutics."

Dr. Mossa adds to this: We gladly recognize the splendid results attained by our colleague, P. Jousset, in this very severe case, by means of homœopathic remedies. But we are a little astonished that our honored colleague did not give more weight in his therapy to the hereditary consumptive, encumbered from the side of the father, and which probably also shows itself in the long continuance of the diarrhœic stools. An intermediate dose of *Sulphur*, or, perhaps, even better, of *Tuberculinum* in high potency, might perhaps have brought a turn to improvement sooner and more easily. On the whole, he operates with medium doses, but he also seems to properly value and use the action of *Carbo veg.* in the 30th potency in the case of asphyxiation. Occasionally, of course, he uses strong doses, such as *Arsenic* 1 and *Aconite* and *Bryonia* in the mother tinctures. This forcing of the effect of remedies is not in the vein of us old Hahnemannians. Why Dr. Jousset totally neglects hydropathic measures, which especially in the form of Priesnitzian wrapping powerfully support our remedies in the resolution of pneumonic processes, we do not quite understand. It is true, that we, in this, pass beyond the prescriptions of Hahnemann, if he should absolutely refuse all outside aid.

The very exact observations carried on by Dr. Jousset, which can be carried through more easily, indeed, in a hospital than in private practice, deserve all praise.—*Homœopathic Recorder*, September 15, 1904.

Gleanings from Contemporary Literature.

COUGH AND ITS SIGNIFICANCE.

Delivered at the Medical Graduates' College and Polyclinic.

By FRED. J. SMITH, M.D., F.R.C.P.,

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The subject that I have chosen to-day to talk to you about is an exceedingly common one, and, I must admit, also very frequently troublesome to treat. When I first gave Mr. Pinch my subject I thought it would be a fairly easy one to bring into manageable proportions, but the more I looked at it the larger I found it was.

I would begin by remarking that cough is very like pain in one respect; it is a signal that something is irritating a nerve or nerves. In the case of pain the irritation may be any-where. In the case of cough it is primarily an indication of irritation of a branch of the vagus nerve, though cough may arise occasionally from other sources, as we shall see. To get a sound basis for estimating what and where that irritation is it is necessary to analyse cough: first, in regard to its mechanism; and secondly, in regard to its causation and treatment. Cough, then, may be defined as an abnormal respiratory process produced by a stimulus reaching a centre, a process which has, moreover, for its object the removal of the stimulus. The importance of this will be seen later in talking of treatment.

It is stated in works on physiology that such a centre has been localized close to the respiratory centre. It is tolerably obvious that such a centre does exist, for the process of coughing is a very complicated one, and there must, therefore, be a great saving in labour if the messages can be controlled by cells which are in close connexion.

THE PROCESS OF COUGHING.

The actual processes in the act of coughing are: (1) an inspiratory effort followed at once by (2) a closure of the vocal cords, in turn followed by (3) violent expiratory efforts in which (4) a sudden opening of the rima glottidis takes place. The chief difference between an ordinary deep respiration and cough lies in this approximation of the vocal cords till the air pressure in the lungs and bronchi reaches a considerable height, sufficient to suddenly force them open and thereby carry with the gust of air the offending material that excites the cough. How high this pressure may reach at times is shown by the lesions in the lung that may be produced by it, either by a sudden considerable increase in the pressure, or by long-continued slighter increase. For instance, sudden rupture of an air vesicle has been produced with consequent pneumothorax in an otherwise healthy chest and emphysema occurs in the slighter forms of a cough which is long continued. How important this closure is, is seen in the ineffectual cough of cord paralysis which we shall mention presently.

COUGH AND THE VAGUS NERVE.

Cough may be and often is, as in the physical examination of the chest, when one asks a patient to cough, a purely voluntary procedure. But we must assume here either an abnormal stimulus from a surface or an abnormal condition of irritability of such surface. The palate, pharynx, larynx, bronchial tubes, and pleura are the usual seats of such stimulus or irritability, but other regions and even the skin may be at times the source of a cough. A complete analysis of all the possible sources of cough involves an examination of all the surfaces to which the vagus is distributed, and all the possible irritants to which those surfaces might be exposed. The branches of the vagus are as follows :

1. A small branch to the meninges which has no interest for us at present because I know of no case of cough produced by such means. The vomiting which takes place in meningitis is probably produced through that same branch by stimulus of the vagus.

2. A small branch—Arnold's or the auricular branch—distributed to the back of the pinna of the ear and probably also to the external meatus part, for a cough is certainly produced from an affection of the external meatus. All of you most likely have met with cases in which the removal of a plug of wax from the ear and the curing of a little external ear discharge has completely relieved a cough which has been a puzzle as regards its causation.

3. A branch to the pharynx joining with other nerves round the oesophagus. This nerve is certainly a source of cough in pharyngeal cases.

4. The superior laryngeal branch distributed as a sensory nerve to base of the tongue, the epiglottis, and the larynx, irritation of which probably produces as many cases of coughing—not due to distinctly pulmonary disease—as all the others together. That is the most important branch to remember.

5. The inferior laryngeal branch supplying motor powers to the muscles of the larynx, and therefore important in carrying out the movements in cough, but it has also a few sensory fibres.

6. The cardiac branches, possibly of some interest to us, but, cardiac cough is more probably due to muscle failure with back pressure and irritation to the lungs with excessive secretion.

7. The pulmonary branches concerned in the cough of gross pulmonary disease such as tubercle, growths, etc., and possibly in the cough of pleural disease in its visceral layer.

8 and 9. The oesophageal and pericardial branches, not of much clinical interest, as cough in these diseases is due generally to pressure on the trachea and larynx or to associated pleurisy. I know nothing about oesophageal cough or pericardial cough.

10. The gastric branches and branches to other abdominal viscera. They come within our present purview because one is very definitely

acquainted with the cough which arises from gastric disturbances in the shape of forms of dyspepsia.

COUGH IRRITANTS.

The irritants to which the surfaces may be exposed may be briefly classified into : (1) Foreign substances, such for instance as tobacco smoke, dust, etc. ; (2) excess of natural secretion which is a very common event in inflammatory troubles ; (3) pressures and inflammation ; (4) acute, or chronic and simple debility, or increased irritability without obvious change in structure so far as the naked eye is concerned. This question of increased irritability is exceedingly important because there can be no doubt about it that many people coming to you would call themselves in perfect health except that they are troubled with "a beastly cough" every time of going out of or into a warm room, in fact with every change of temperature. Examine them as much as you like and you find nothing. The condition is simply one of increased irritability, and it occurs particularly after influenza and other debilitating diseases. Every now and then one sees some practitioner hopelessly at his wit's end to know what to do with such a case, and I do not know that I can give him anything that will cure such a case with ease and certainty.

COUGHS AND THEIR CAUSES.

Many classifications of cough might be given, but one of the simplest and most useful is to divide them boldly into two classes only, namely, (1) the cough useful and (2) the cough ornamental or useless. Provided we are aware of the causes which may be or rather are, giving rise to a member of either class I know of no better classification. Indeed in dealing with the treatment of a cough this must be our guiding principle. The cough that is useless should if possible be checked, whereas the useful cough should be encouraged. In attempting to discover the cause of any particular cough we must, however, give a more systematic list of the possible causes to be looked for, that is, from a clinical point of view, a list of diseases. Keeping to an anatomical order we may then enumerate them.

1. *Ear*.—The principal causes of cough here are plugs of wax and chronic catarrh of the external meatus. If not complained of these are likely to escape notice unless a systematic examination of the patient is made, when they at once become obvious if an examination is made of the ear. As a direct cause of a cough they are, so far as my personal experience in practice is concerned, rare, but in talking with one's aural friends they are apparently not so rare as one would be led to suppose. Our aurist tells me he often sees patients whose principal complaint is first of all that of being a bit deaf, and then such a patient will say "It is not the deafness that worries me so much as that horrible cough." And the cough ceases with treatment of the ear.

2. *Pharyngo-tonsillar Troubles*.—These include : (a) A long pendulous uvula : this is one of the most common causes of a cough that occurs with unflinching regularity when the patient lies down ; (b) chronic catar-

rhial pharyngitis, with small nodules of adenoid tissue to be seen, and patches of excessive vascularity ; (c) chronic tonsillitis or adenoids must not be forgotten in this connexion ; and also (d) acute inflammation of some parts of the pharynx and palate. Inspection of the mouth with a simple spatula will commonly reveal any of these conditions ; their presence is usually suggested by hawking being a prominent complaint with the cough. The patient coughs and hawks to get his pharynx cleared. A friend of mine is troubled in this way, and here I might mention that the only way of treating such cases is to have these slight patches of adenoid tissue cauterized ; Periodically about once a year when he gets an extra bad attack, my friend goes to Sir Felix Semon, who kindly burns it for him. He is better for a few months, and then he begins to cough again. The sputum in these cases is usually rather characteristic ; it comes up in small pellets not infrequently mixed with a little blood—an important point, because haemoptysis in the mind of the public is almost synonymous with consumption. But it is our business to be aware that such haemoptysis is very frequently not due to tubercle. I think that not more than 50 per cent. of haemoptyses are due to tubercle.

I put into this group the specific febrile diseases, because they belong to the same branch—namely, the pharyngo-oesophageal—of the vagus. A sore throat with cough often ushers in an attack of measles or even of scarlet fever or of rheumatism, and in pertussis or whooping-cough the pharynx and upper air passages seem to be the seat of the infection. In the treatment of pertussis some methods are directed entirely to what we may speak of as antiseptic cleansing of the back of the throat, palate, and larynx, such as having an antiseptic burning in a cradle. Diagnosis here rests largely with the thermometer and other complaints of feverishness, with aching in limbs or head. In pertussis the evidence will rest on the age of the patient, or on a history of possible exposure to infection in an adult. One is rather apt to overlook whooping-cough in the case of an adult. I had a case not long ago in which a father and his three children were down with whooping-cough, and really he was very ill with it ; he could get very little sleep. When dealing with coughs in general, it must not be forgotten that cough in the early days of pertussis has not yet acquired the characteristic whoop.

Diphtheria belongs to this class before it has attacked the larynx, and in young children who are hardly capable of complaining of sore throat this possible source of a cough must never be overlooked. A mother brings a child to you and says : "It has been coughing for the last day or two and I want you to examine it." The child does not appear to be very ill, because diphtheria does not always start in a malignant way. But it is very necessary that you should look at the back of the throat—I know the difficulty of that—because of the possibility of the case being one of diphtheria.

3. *Laryngeal and Tracheal Troubles.*—These form an enormous group which one must classify in some sort of way. I do not pretend to tell

you that the following is the best way to classify them, but it is a very useful method : A, A gross local visible lesion ; B, a gross local loss of power in the cords ; C, no visible changes or very slight ones.

With regard to the first of these three groups, A—a gross local visible lesion—you have tuberculous, syphilitic, and malignant ulceration. None of them are very rare, and all have to be thought of. Then you have acute inflammation, which is a gross local visible lesion ; acute inflammation may be due to a simple cause, a simple laryngitis, or it may be again specific—that is to say, either diphtherial, tuberculous, or syphilitic. Again, the inflammation may be due to a foreign body, of which I had an example only three days ago in the London Hospital. A girl of about 16 years of age came in complaining of a cough, and the sputum which she brought up was very offensive. She then developed pleurisy, and ultimately in the *post-mortem* room we found half the shell of one of those so-called “monkey nuts,” which had caused extensive consolidation of the lung—in fact, gangrene. Well, then we have also papillomata of the cords not to be forgotten as a possible cause, more common in children but also found in adults. The German Emperor probably has papillomata of the cords.

In the second or B class of laryngeal and tracheal troubles gross local loss of power in the cords—any of these ulcerations that I have mentioned above might cause paralysis of the vocal cords if the infiltration be sufficiently deep, but in the majority of these coughs the loss of power in the cords is due to pressure on the recurrent laryngeal below in the thorax. Of course, the causes of pressure are as numerous as the causes of swelling. Glands, carcinoma, sarcoma, lymphoma, aneurysm must none of them be forgotten as possible causes of cough, and they require to be looked for as otherwise they may not suggest themselves.

We now come to C, or the third of these groups, which is a very important one, namely, no visible change to be seen, or only very slight ones. I have divided this up into two. First, a condition chiefly of local excessive irritability, possibly associated with slight visible changes, congestion, etc. For instance, after influenza and other debilitating diseases you get a cough lingering for months and no treatment seems to touch it. Then from excessive use (by hawkers and public speakers, etc.) a nasty irritable condition of the larynx arises which requires to be treated from the view of checking the cough. You get just the same thing in old alcoholics and again from tobacco. I am a smoker myself and I can quote my own experience: I can usually stand a considerable amount of smoking, but I had an attack of influenza a few weeks ago, and for a fortnight afterwards I could not touch tobacco ; it started a cough immediately simply from local irritability, the tobacco smoke acting as an irritant. There is precisely the same remark to be made in regard to dusty occupations. In middle-aged and elderly men there is a form of irritability which must not be overlooked—a gouty condition of the larynx. I do not know that there are any changes to be seen, but the possibility of gout has to be considered in connection with this excessive irritability.

The second condition that I have put down in connexion with this third group, is a condition of pure reflex stimulus certainly without any visible changes. In such cases there is on the trachea a pressure which, though out of sight, causes cough. Of this I had only the other day, the case of a man well known in society. He had a cough for which no explanation could be offered until about the third or fourth day, when he coughed up a table-spoonful of pus. A small abscess had broken into the back of his trachea and he coughed up the pus. The case rapidly proved fatal. Aneurysms do the same sort of thing. Then there may be pressure on the trachea as the result of enlarged glands. We know of that occurring in children. I had a case of cough in a small boy quite recently, which I put down to gland growth. I overhauled him very carefully and I thought there was probably gland pressure at the back of his trachea. Sometimes one reads these cases of gland pressure on the trachea being diagnosed, but one can only guess at them.

4. *Pulmonary troubles*, which I have put down as another cause of cough, need hardly delay us much, since their diagnosis is generally easy. They include acute and chronic pneumonia, broncho-pneumonia simple and septic, tubercle which may be miliary or small, or it may be gross in either an early or a late stage. These are all too obvious to require much comment. Then there is simple bronchitis which may be acute or it may be chronic, in elderly people generally associated with emphysema. Besides simple bronchitis there are the complicated bronchial troubles such as bronchorrhœa, of which I know little as an independent disease, but it is met with from time to time. Then bronchiectasis which has its characteristic sputum, abscess of the lung, gangrene of the lung, hydatids, and other growths. These will all give rise to coughs, and can be diagnosed without really any very great difficulty if the chest be carefully examined.

5. *Pleural affections* form the next great group of causes. They are usually associated with pain. Of pleural affections you have acute pleurisy, which certainly may be dry, or it may be with effusion of simple serum or pus. Then you have your chronic pleurisy. We are rather apt to lose sight of chronic pleurisy; it is more often met with than is generally admitted, and it may be simple adhesions or there may be definite thickening of the pleura. I saw an excellent illustration of that only this afternoon. The condition had come on after the removal of the right kidney twelve years ago. The wound had apparently suppurated, and the pleura at the base of the right lung was at least one-third of an inch thick. This good lady had had a great deal of cough, for which no explanation was forthcoming. Then besides acute and chronic simple inflammations, there are all sorts of growths occurring on the pleura, both malignant and tuberculous, and any of them may give rise to cough or stitch in the side.

6. *Stomach troubles* are included in the last group of clinical causes. I know nothing about the kidneys or organs below the stomach, giving

rise to cough, but certainly one is well acquainted with gastric troubles and chronic dyspepsia of various types as causes of most obstinate cough. I say one is well acquainted with it. My reason is that one meets now and again with a patient who complains of a cough, and when asked, "When do you cough?" the reply is, "Directly after a meal. I feel so full that I begin to cough. Nothing seems to relieve it except that if I am sick the cough will stop." Upon several occasions I have met with cases of this description, therefore one must admit a class of gastric coughs. So much, then, for a clinical list of causes of cough. It is obvious that in the time at my disposal, even if I had two lectures, I could not pretend to discuss the differential diagnosis of all these numerous causes of cough individually.

THE DIAGNOSIS OF CAUSES.

What I propose to do now is to suppose that we have a patient before us, and I shall go through an imaginary interview with him to show how one's field of diagnosis is narrowed down to probably a few only of the possible causes which may then be further investigated if necessary. I emphasize those words "is necessary." Just recently in the *BRITISH MEDICAL JOURNAL* there has been a considerable correspondence as to the treatment of pneumonia, and it struck me that all the correspondents who had ventured to criticize Dr. Lees (the original writer of the article) had left out the one point which seemed to me to be most seriously open to criticism in the whole article, and that is, the statement that you should examine the chest at least every day and sometimes even he went so far as to say, twice or three times a day. I am certain that that is exceedingly wrong teaching. What I say is that when once you have got a definite diagnosis of pneumonia you can certainly inform yourself as to the progress of the disease by the temperature of the patient, by his statements, and by his general appearance. I am quite sure that the discomfort, to say nothing worse of it, to which you put him in making him sit up in bed whilst you examine the chest to see whether his pneumonia has gone another inch or two, is a bad thing for the patient, and is going a long way round to find out what can generally be ascertained by the shorter method of observation.

Let us see what aids we get toward diagnosing the cause of the cough.

The Age of the Patient.—In babies and quite young children most of the more unusual causes can be at once excluded by the mere fact of age. Bronchitis, broncho-pneumonia, tubercle, pneumonia, and whooping-cough are far and away the most likely causes, and if there be no temperature the last becomes at once the probable cause if we can exclude the presence of a foreign body; the possible presence of the latter is almost certain to be brought to the notice of the medical man by the mother, either with a direct history of her having seen the child put something in the mouth and start coughing or by a sudden fit of coughing in the midst of perfect health. A case which was brought to our notice the other day is rather apropos of this: A child perfectly well was left in the care of a man

during the temporary absence of the woman who was nursing it, on her return she found that the child had definite laryngeal trouble with cough and it turned out that the man—he has got seven years penal servitude for it—had pushed a cork into the back of the child's throat. I have myself met with a somewhat similar case: A child was taken with violent fits of coughing after eating some soup. Inasmuch as what it had eaten was soup, I was misled and my experience may be of use to you. I said to myself the soup was probably too hot and the child had perhaps burnt its throat, and so excited a cough. It did not occur to me, I must admit, that here was a case in which there might possibly be a foreign body. The coughing was so paroxysmal and troublesome that I had the child taken to hospital, and there it died after tracheotomy, at which nothing was found, but *post mortem* I found a jagged bit of bone sticking in the child's larynx; this had come from the soup and had gone the wrong way.

In older children, from four years up to puberty, age in itself offers us but little guide, nor in fact do we get any assistance from age alone until, say, from 40 to 45, or from there onwards; at this period slight but persistent chronic bronchial troubles, quiet pleurisies and growths of all kinds, including aneurysms, come very much to the fore. One case made a very strong impression upon me, in which a young fellow, about 30, had been playing football on a Saturday: he was seen by a friend of mine on the following Tuesday or Wednesday. The young man said, "I do not know why I have come to you; it is only to please the mother." He was noticed to be a little bit short of breath, and had a slight cough, but beyond that nothing. One side of his chest was full of fluid, and several pints were drawn off; this is an illustration of quiet pleurisy.

Obvious Illness or Distress.—We may use the obvious illness to denote fever, loss of flesh, wasting, etc., and we may take distress to denote difficulty or rapidity of breathing and blueness of the face or lips. In the former case the cough will probably reveal itself by physical signs in the chest of some acute inflammatory trouble or very possibly an advanced phthisis. An especial caution must be given to carefully examine the throat for a membrane of diphtheria or for an acute tonsillitis in cases where there is distress in connexion with breathing. Actual dyspnoea or difficulty in inspiration—mere shortness of breath is not necessarily dyspnoea—in young subjects is strongly suggestive of laryngeal obstruction. A little child is in obvious distress with a cough if the ribs or supraclavicular parietes are sucked in during inspiration; in such a case do not forget to think of diphtheria as a cause of laryngeal obstruction. In older subjects actual obstruction is much rarer, but the blue lips and obvious panting are strongly indicative of cardiac weakness as the cause of the cough or chronic bronchitis with extensive emphysema.

How long have you had the cough?—This is probably the first question that you will put to your patient, and much information may be derived from the answer. A cough sufficiently severe to worry the patient so far

as to take medical advice, and which has lasted only a few days, is practically sure to belong to the group of "acute obvious disease" either in the mouth or chest. The more obscure causes—pressure, chronic laryngeal irritation, etc.—commonly give rise to a mere tickling in the throat with slight cough at first, and it is only when it has lasted for some time that it has caused sufficient alarm to necessitate or render advisable, in the mind of the patient, medical advice. Hence the duration of the cough is a very important point in diagnosis. If the cough has continued only for a few days the group of acute inflammatory troubles is suggested; if it has lasted some months it is probably due to a cause with gross physical signs in the chest or to a growth that needs some care to find.

Did it come on after a distinct illness?—Here we come to the group of infectious diseases—measles, influenza, scarlet fever—which are very liable to leave a cough; so also may broncho-pneumonia, pneumonia, or acute pleurisy. If you hear: "Yes, I have had pneumonia three months ago and have had the cough ever since," immediately you will say: "Has this pneumonia cleared up?" And you will examine the chest and listen to the area alleged to be infected. You may find some crepitations and perhaps tubular breathing. A differential diagnosis is then required between actual definite tuberculosis and the result of chronic pneumonia; this may mean that you will have to hunt for the tubercle bacillus. The cause of the cough, then, coming after a definite illness may be either chronic induration of lung or simple irritability of the larynx. I might mention here what I have found most useful in the treatment of laryngeal irritabilities left after infectious fevers. The following prescription I have found very successful: R Liq. morp., mx; syr. limonis, mx; glycerine, mx; acid. hydrocyan. dil., miiij; syr. scillae, mx; aq. ad 3j, 3j, pro re nata. The lemon, I think, is important; it has a little sharpness and acidity which seems in some peculiar way to relieve the irritability. It is important also that you should tell the patient how to take this linctus. Do not tell him to take a teaspoonful and swallow it as a medicine at once. It is perfectly true that the morphine is a little bitter, but the glycerine, lemon, and syrup of squills disguise that bitterness and make the linctus pleasant to take. Tell him to dip the tongue into the linctus and to swallow it slowly; he thus takes it in tiny sips, and by this means it will hang about the palate and the upper part of the larynx much better. If the linctus be swallowed very slowly some of it may actually get on to the epiglottis and those parts which are so very irritable.

When does your cough come on: what excites it?—A cough that only comes on when a patient is lying down is very suggestive of a relaxed uvula and laryngeal irritability. A cough coming on immediately he gets into bed at night is primarily suggestive of phthisis or of whooping-cough. But there is in addition a very important consideration to be here remembered, and one which has a strong bearing upon the treatment of cough in phthisis at an early stage; it is this. The temperature of a

bedroom is usually much below that of the sitting room in which the patient has possibly spent his evenings ; secondly, the patient undresses and exposes the skin to this lowered temperature ; thirdly, he gets into sheets which are, and feel, much colder than the skin. Any one of these may, and frequently does, excite a fit of coughing which may last long after equilibrium of temperature between skin and bedclothes has apparently been established. Such a cough as this is usually caused by laryngeal troubles, acute or chronic. But, on the other hand, a cough which wakes the patient up after he has got warm in bed—possibly asleep—is far more likely to be due to disease of the substance of the lungs. Malignant or other growths may do the same thing but tubercle is what you more especially suspect. Then in a little child whooping-cough may be the cause of the cough, the paroxysms of which are more frequent at night.

A cough in the morning only is very suggestive of bronchial or laryngeal catarrh due to change in the temperature or a slight accumulation of secretion during sleep. A man jumps out of bed when warm, and begins to cough because the temperature of the room, unlike the temperature of the bed, is not the temperature of his body. A cough after meals suggests dyspepsia as the cause. A cough on smoking or talking is almost certainly due to laryngeal affections.

A cough only on exertion primarily suggests cardiac debility, but it must not be forgotten that exertion may lead to mouth breathing, with consequent cough. If one begins to put forth great exertion, one usually opens one's mouth and takes a deep breath, and thus irritates the larynx ; so that it does not necessarily follow that the cough thus induced by exertion is a cardiac cough. The heart must, of course, be carefully examined, particularly to see if there is any undue frequency or irregularity of rhythm or beat, or if there is an insufficient difference between the first and second sound. *Bruits* are a point of difficulty, because many hearts with *bruits* are working perfectly well ; so that a *bruit* alone is of small consequence if the rhythm be not interfered with. If the heart be sound, then a cough on exertion probably means emphysema or chronic irritability of the larynx.

Do you bring up anything with the cough, and if so, what ? Is the cough relieved by bringing up something ?—You may derive a great deal of useful information from the answer to these questions. Take a typical example or two. The sputum from a cavity of any sort (phthisical or simple bronchiectasis) is commonly profuse in quantity with each act of coughing, or rather, with each attack of cough, and the relief experienced is frequently quite complete for a time. The patient has emptied his cavity, has ceased coughing, and then goes on for several hours without any cough at all. The smell of the sputum will largely differentiate between the two conditions, simple phthisis and bronchiectasis. Phthisical sputum very rarely has any smell except a peculiar faint, sickly smell of its own. We all know how offensive a smell a bronchiectatic cavity may

have. Again, the sputum of tubercle is nummulated, whereas that of bronchiectasis and other cavities is more homogeneous and watery as a rule.

The sputum of acute affections is thick and very viscid.

What do you bring up?—If he replies to the effect that "It is very sticky," you know that the man has got some acute trouble in connexion with the mucous membrane, for it is only under such a condition that you get very sticky sputum. "Does that give you any relief?" "No, I want to cough again the next few minutes." "Do you bring up any blood?" "No, I have never seen any." This negative reply does not help much. If he says, "Yes, I do bring up blood," one must admit that such a positive reply makes one suspect tubercle, but the affection is not necessarily tubercle all the same, for acute bronchitis and pharyngeal affections are often associated with streaks or stains of blood; hæmorrhage from tubercle is generally free. You will then be careful to examine the back of his pharynx and his teeth to see whether the blood may not have come from the gums or posterior pharynx; if these are healthy you will have to be careful in examining the apices of the lungs, because of the possibility of the complaint being phthisis. But generally speaking the blood spat up from a tubercle is a little clot, whereas in other conditions it is a streak of blood in the sputum. If you see the sputum that is brought up perhaps you will find it to contain a lot of pus. That does not signify very much, except by its quantity. Remember that a mucous membrane very easily produces pus; it is the natural result of inflammation of a mucous membrane. On the other hand, serous membranes when inflamed secrete a clear serum. Purulent inflammation of a mucous membrane may not be anything of great consequence, but purulent inflammation of a serous membrane is a very serious matter.

If there be no sputum we do not get so much information, for a dry cough is met with in so many different conditions. For example, the cough of early phthisis, the cough of heart failure, frequently the cough of all forms of pressure on the trachea, stomach cough, ear cough, and the cough of simple irritability of the larynx are all dry.

Is there pain with the cough?—What is the locality of the pain if the patient complains of it. In laryngeal and pharyngeal troubles the patient correctly locates the trouble by the associated pain in most cases, though we must not make the mistake of assuming that no local pain in those organs necessarily excludes them as causes of the cough. In pleuritic troubles the patient again will locate the pain in the ribs or just under them. Aneurysm and growths are almost as often free from pain as associated with it. There is one form of pain that must be here alluded to as it is frequently a source of fallacy. In the act of coughing the recti abdominis are given very severe work to do, and the patient will often enough say "There is something the matter with my belly; that is where my pain is." But that pain probably comes from his coughing,

‘and you will find it is so in a large number of cases by examining the abdomen and finding nothing.

Has the voice altered since the cough appeared?—Ordinary laryngeal troubles, with acute or even chronic inflammation, are often accompanied by hoarseness. But the voice may alter in another direction: there may be feebleness of the voice, inability to sustain it, the patient cannot speak a long sentence without getting short of breath. That should put you on the track of the possibility of paralysis of one vocal cord, because the voice is produced by varying degrees of approximation of the vocal cords. If one of the cords is paralysed it will not approach the other, and then there will be an opening left, through which the air escapes too rapidly with the result that the patient will be short of breath, and the voice is not good.

These are, I am afraid, very scanty hints as to the possibility of diagnosing the cause of a cough. At the same time, when you have finished all these questions that I have suggested, it is more than probable that you will have eliminated most of the causes, and not only so, but you will probably have determined positively to what the cough is due:—*Brit. Med. Journ.*, May 28, 1904.

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METEOROLOGY AND DISEASE IN CALCUTTA.

We attempt to take a survey of the relation between meteorology and disease in Calcutta. The task is difficult in the extreme and no assurance can be given of a rigid scrutiny which may satisfy all enquiries. So far it can be said that a faithful examination may elicit many truths of great importance, retaining the view that sequence of facts has established a relation between dust and disease. The propagation of dust in our homes from the streets is a fruitful act in the creation of diseases and thereby causing increase of mortality. In the tropics, where the keen rays of the sun have a greater influence in destroying the morbid poisons than elsewhere, it has at the same time the higher power to scatter the pathogenic microbes in our foods, drinks and lungs. The situation becomes very grave in populated cities devoid of proper sanitary measures. In Calcutta notwithstanding the boast of well regulated sanitary applications the death rate has not appreciably decreased within the last

quarter of a century. While the European cities have actually decreased their deaths, the Indian towns are vying with each other in decimating their population. Plague, cholera, fevers, smallpox, diarrhoea, dysentery and famine have become prevailing scourges. Even the metropolis of British India is unfortunate in not securing a minimum equal to any English city. Highly paid officers concerned with sanitation seem to be unacquainted with the real principles of Public Health. Streets are being broadened and enlarged at a rate which defies the energy of the health department to keep them in actual order. The opening of new roads creates a superabundant difficulty in maintaining an adequate conservancy arrangement. The watering of streets to paste the dust in order to minimise the influence of the morbidic materials contained therein, is a thing almost unknown in the Black town where mortality is higher. The White possesses a privilege unequal to their payment toward rates and taxes. When decentralisation scheme has been vigorously enforced, each ward is well worthy in receiving a contribution to inaugurate sanitary measures equal to their co-operation to swell the municipal exchequer. If the poor rate payers are to be bled, they should at least receive satisfaction in enjoying sanitary necessities to reinvigorate them for a fresh bleeding. They cannot be bled for others. It is an extreme selfishness to pay for the suburban wards (from nineteen to twenty-five), at the sacrifice of the proper town. If disease can be propagated by dust, that filth can come from outside the municipal area. It will not be a plea for always enlarging the town. The commercial influence is about to absorb Howrah. The consequence is, that place will be benefited at our cost to see commerce and trade prosper. The commercial houses should contribute for increasing their scope. If Calcutta have acquired the present influence on account of the prosperous commerce and trade, it would be a bad argument to say that all benefits must be first for the commercial interest. The rates are paid by the owners and occupiers of houses for their own benefit. In this consideration, it must be said, that merchants and traders

form a double personality" apart from each other. A trader is a trader so long as he is in his office or shop. His trading interest relatively ceases when he comes to his residence. The bustle of trade can only be observed in trading quarters. If pilgrim tax can be imposed for the convenience of pilgrims, it will not be improper to say, that taxes levied from trading houses and shops should be devoted to the interest of trading localities. If valid objection can be raised against the improper absorption of the Famine Fund by the Afghan War, it will not be late in the day to oppose the bad use of rates to help the mercantile taxpayers in order to satisfy their morbid appetite. The other rate and tax payers have no less interest in the town than the mercantile taxpayers. The trading interest has become the paramount influence of the merchant monarchs. The Foreign Office has assumed a subsidiary interest to the omnipotence of the Statistical Department of the Government of India. The sign of the times is, that all concerns must lose their significance before commerce and trade. We are not concerned with other municipal wastes besides those which affect sanitation and public health. For this reason we raise a timely protest against that improper absorption.

Except the spread of microbes by gusts of winds, there are other meteorological factors which operate on the mortality of a country. They are the influence of temperature, rainfall, the difference between maximum and minimum, humidity created by continuous rainfall, and circulation of dry or wet chilly winds. In the January number of the Journal of Balneology and Climatology, Mr. W. F. Tyler has coined a new word "hyther" which means the joint effect of temperature and humidity upon human sensation.

The meteorological facts in Calcutta during the month of January are: The highest barometric pressure was 30.234 inches; lowest 29.889; mean reduced to 32 degrees temperature 30.075; variation from the normal +.010 inches; prevailing direction of the wind N. W.; mean velocity in miles daily 46; highest temperature of the month 83.4; lowest 48.4; mean

daily maximum 78·0; mean daily minimum 54·2; mean daily temperature 66·1; variation from normal mean—0·1; humidity 85; variation from the normal mean +1; rainfall nil; normal mean of the month 0·29 inch.

The remarkable feature during the month was the absence of the winter disturbance, which creates shallow depression. it "crosses India from the west, and in the course of its eastward movement causes cloudy and less frequently showery weather in Bengal." The Meteorological Reporter to the Government of Bengal then observes: "The first cold season disturbance then commenced in the North-west, but it broke up or moved along the region of the Himalayas, and the unsettled weather was almost entirely in the northern districts.

The greater part of the rainfall in January occurred with that disturbance between the 18th and 20th. The showers were fairly general in Bihar on the 18th and 19th, and a few scattered showers fell in Chota Nagpur on the same days. Scattered rain fell in North Bengal on the 19th and 20th.

Following this disturbance the usual cold wave spread eastward over Bengal, and between 21st and 25th fine dry cool weather prevailed."

There was a disturbance with a series of slight changes till the end of the month, and that could influence the health of the population though it was little. From the 27th December 1903 to the 2nd January 1904, there were 19 cases of cholera, plague 18, smallpox 1, fevers 139, and bowel complaints 74. All other causes gave 250 cases or in total 501. The ratio per one thousand population during the week was 30·7. The next week from the 3rd to the 9th January, there were cholera 11, plague 15, fevers 122 and bowel complaints 59, from all other causes 255. In total 462 cases. Per thousand population the ratio was 28·8. Comparing with the last week, there were less deaths from all kinds of diseases, the most marked were cholera, plague and fevers. This decline may be adduced to the daily fall of the temperature as well as the velocity of the wind,

though the rainfall was nil. The gradual decline may be traced in the subsequent reports.

From the 10th to the 16th January, during the week, cholera had 16 deaths, plague 12, fevers 122, bowel complaints 71 and all other causes 137 cases. The total was 458. The ratio per thousand population was 28.0. Compared with the last week, cholera increased but plague declined. Fever gave the same number. Bowel complaints perceptibly decreased. The spread of cholera can not be ascribed to any other cause but to the dissemination of the comma bacilli. It must be said that the disease principally owes its spread from the shrine of Kalighat, as the visitors go to visit the goddess in an empty stomach for religious observance and there resort to foods which are mostly undigestible. Possibly the drinking water from the unclean vessels of the shopkeepers is the fruitful source of the disease. It cannot be denied that the water at Tolly's Nalla is the great reservoir of comma bacilli. We have the painful experience to treat several cases of cholera after their return from the shrine of Kalighat. It cannot be doubted that there are other foci of dissemination besides Kalighat. The subsequent spread in Calcutta cannot be sufficiently traced from other causes. The noteworthy fact is that it mostly pervades the Hindu population who inhabit the northern wards of the town as well as the suburban wards. The Mahomedans imbibe the poison from other sources, perhaps from the dust containing the cholera microbes in their foods and drinking waters.

From the 17th to the 23rd, Cholera was increasing. The mortality was 22 against 16 in the previous week. Plague was almost equal having 11 deaths. Fever was evidently decreasing from 122 to 92. It was so with the bowel complaints declining from 71 to 51. All other causes gave 275 deaths. The total was 451. The rate per mille was 27.6. In the next week from the 24th to the 30th January, the deaths from cholera was increasing. Against 22 of the last week, this week had 27. Plague gave 17 deaths, against 11 of the last week. Fever increased from 92 to 116. Bowel complaints remained almost stationary

giving 54 deaths against 51 of the last week. From all other causes there were 239 deaths. The total was 497. The increase of death from cholera, plague and fevers was most noticeable. This increase is simultaneous with the series of meteorological changes causing disturbances and favouring increase of temperature and velocity of wind.

The remarkable feature during the month was the gradual rise of deaths from cholera. In the beginning of January, the disease confined to a few northern wards of the town, Coomartolly, Burtola, Jorabagan, Jorasanko, Burrabazar, and Moochipara. The southern wards affected were Fenwick Bazar, Ballygunge, Tallygunge, Alipur, Watgunge and Garden-Reach. In the next week from the 3rd to the 9th, the additions were Sukea's Street, Colootola, Entally, and Bhowanipur. The released wards were Jorasanko, Jorabagan Ballygunge and Tallygunge. The disease confined itself in these wards. During the week ending the 16th January, it disseminated in other wards. Jorabagan Jorasanko, and Burrabazar which could not remain immune for a long time in any spread of the epidemic added their share of unhealthiness. In the next week marking the end of the 23rd January, almost all the wards in the northern end of the town, demarcated by Bowbazar Street were the sites of the epidemic occurrence. Moochipara showed 5 deaths and Jorabagan 4. Next to them are Fenwickbazar and Entally. The prevalence of plague began to decrease from the beginning of January. The highest number of deaths during the month was 17, and 12 the least. It is a remarkable fact that plague do not prosper in Calcutta during the cold weather, perhaps on account of the absence of the sinking of the subsoil water in the deep alluvial stratifications carrying the microbes with them, as well as in the absence of great gusts of wind that spread dirt mixed with the microbes of the disease.

The fevers showed a comparative diminution like plague. From 139 in the first week, it came down to 92 in the third week. Then there was a sudden rise to 116 in the fourth week.

This rise was concomitant with the unsteady character of the meteorological condition.

The bowel complaints which increase in the cold weather, were causing deaths varying from 71 to 51. The exact causes of their rise and fall cannot be ascertained due to the changes of weather. They greatly depend on the irregularity of dietetics.

During the month of February the meteorological conditions were as follows: The highest barometrical pressure was 30.107 and the lowest 29.896, the mean reduced to 32° was 30.007; the variation from normal mean +.004; mean direction of the wind N. W.; mean velocity in miles daily 72; highest temperature of the month 90.4; lowest 46.9; mean daily maximum 82.7; mean daily minimum 59.1; mean daily temperature 70.9; variation from normal temperature—0.3; mean humidity 81; variation from normal mean—3; rainfall 2.58 inches. Comparing with the last month there was less barometric pressure, greater fall of temperature, greater humidity, greater velocity of the wind, a little rainfall, in contrast with the last month which was without rain.

The Meteorological Reporter to the Government of Bengal observes: "The weather of the month naturally divides itself into three periods, from the 1st to the 12th or 13th, when ordinary cold weather conditions prevailed, the pressure being on the whole above the normal while the temperature was abnormally low. During the middle period of the month irregular conditions arose, the tendency being to a premature establishment of a hot-weather distribution. These conditions culminated in the formation of a depression on the 17th, which dominated the character of the weather for the next few days. This depression was not of the nature of a cold weather storm, but originated in Bengal itself, and arising as it did from local causes was, as is usual in such cases, accompanied in its progress by thunder storms. With the exception of the rain which fell on the first two days of the month, the only precipitation which took place in February was due to the influence of this depression. The latter portion of the month was characterised by a return to the

normal distribution, average pressure being high, as well as the temperature for the whole period."

The mortality during the month was the following: In the week ending the 6th February, there were 14 deaths from cholera, 50 from plague, smallpox 2, fevers 132, bowel complaints 59, in total 501, deaths; from the 7th to the 13th February, cholera 19, plague 45, fevers 98, bowel complaints 49, in total 438 deaths; in the week ending the 20th February, cholera 34, plague 75, fevers 111, bowel complaints 57, in total 546 deaths; till the 27th February from the 21st, cholera 34, plague 120, smallpox 5, fevers 107, bowel complaints 59, total deaths 581.

It is evident that cholera was gradually progressing from the month of January. During the first half of the month of February the highest mortality was 19, against 27 the highest mortality of the last month. This period exactly coincides with the time when cold weather prevailed. In the third week there was the sudden increase to 34 deaths. During the fourth week, the mortality was 34. The last half of the month was characterised by greater velocity of wind, as well as a disturbance owing to a depression in the Bay of Bengal. The invasion of plague was rather by leaps and bounds without any regard to the temperature. Notwithstanding the cold weather that prevailed during the first half of the month, the mortality increased from 17 in the fourth week of the last month to 50 during the week ending the 6th February. In the next week it was 45. With the unsteady character of the weather and the greater velocity of the wind, the mortality suddenly attained the high figure of 75 during the third week, and in the fourth it was 120. Smallpox made appearance but the death rate did not exceed 5 during the month. From the last week of January, fevers showed greater mortality, 132 against 116. In the 2nd week, there were 98 deaths, showing decrease perhaps due to the cold-weather. During the third week the death was 111 and in the next week 107. The last two increases can be ascribed to the unsettled weather mentioned before. The highest mortality from bowel com-

plaints was 57, almost equal to that of the last week of January which was 54. During the first week of February, the mortality was 30·7 per mille, against 27·7 in the last week of January. In the second week it fell down to 26·8; in the third, there was a rise to 33·4; and in the fourth, the figure was 35·6 per mille. It is evident that mortality was gradually rising. The exception during the second week may be due to the prevalence of the cold weather, which can probably retard the activity of certain microbes.

During the month of March, Calcutta was influenced by the following meteorological conditions: Highest barometer 30·004; lowest 29·804; mean reduced to 32°, 29·892; variation from normal—0·13; wind W; mean velocity 79; highest temperature 100·0; lowest 62·9; mean daily maximum 91·7; mean daily minimum 69·4; mean daily 80·6; variation from normal mean +0·4; mean humidity 79; variation from normal mean—2; rainfall 2·62, normal mean 1·14.

Comparing with the last month, the barometric pressure was greater; the temperature was higher; higher velocity of wind and less humidity. The Meteorological Reporter to the Government of Bengal observes: "During the first half of the month weather was feebly unsettled, small and shallow areas of depression passing over Bengal in different directions during that period. The distribution of pressure was undergoing a change from the 1st to the 15th and the change was naturally accompanied by irregular winds and the usual concomitant thunder showers. During the latter half of the month, on the other hand, the circulation of winds was steady and of the usual hot weather character. As, moreover, the gradient at the head of the Bay was not sufficiently strong to produce a strong indraught of wind, and as, moreover, the distribution was such that the winds were from the south-west and not from the south-east, and consequently not recharged with moisture, the conditions for usual nor-wester thunder storms, which are prevalent at a slightly later period, were wanting, and the weather during the latter half of the month was fine and settled."

The mortality was as follows: In the week ending the 5th March, Cholera 43, plague 174, small pox 2, fevers 101, bowel complaints 52, total deaths 631. During the week ending the 12th March, cholera 45, plague 230, small pox 4, fevers 90, bowel complaints 64, total deaths 672. The week ending the 19th March gave cholera 58, plague 295, small pox 4, fevers 73, bowel complaints 44, total deaths 679. In the week ending 26th March, cholera 61, plague 471, small pox 1, fevers 112, bowel complaints 54, total deaths 943. In the first week the proportion of deaths in thousand population was 38·7, in the second 41·2, in the third 41·6 and in the fourth 57·8.

In the last week of February, cholera had 34 deaths, in the first week of March 43, in the second week 45, in the third 58, and in the fourth 61. The gradual increase of mortality may be ascribed to the unsettled state of the weather. In the last week of February plague had 120 deaths. In the first week of March 174, in the second 230, in the third 295 and in the fourth 471. There was slight rain in the two months February and March, but the coming in of the hot weather with the greater velocity of wind than before, created the dispersion of dust and increased the number of deaths from cholera and plague. Small pox was insignificant in its attack, not giving a higher mortality than 4. In the last week of February, deaths from fevers were 107. In the first week of March 101, in the second 90, in the third 73, and in the fourth 112. It is a fact to observe that fevers in general did not show that steady rise like cholera or plague. The assertion is disproved that there is a constant relation between the attack of fevers in general and that of plague. The prevalence of fevers may be ascribed to the bad quality of drinking water, which is absent during the period before rains in Calcutta. A little increase or decrease may take place according to the variation of temperature, but they do not act permanently. The bowel complaints had a variation from 64 to 44. The most marked thing is the gradual increase of the total death rate from 38·7 to 57·8 increasing it by 19·1 per mille. The large addition may be ascribed to plague.

During the month of April the following meteorological changes were observed: Highest barometer 29.853; lowest, 29.542; mean reduced to 32°, 29.731; variation from normal mean—0.68; wind W; mean velocity 17.4; highest temperature 101.5; lowest 69.4; mean daily maximum 95.2; mean daily minimum 77.4; mean daily temperature 86.3; variation from normal mean +0.7; mean humidity 78; variation from normal mean—3; rainfall 0.33, normal mean .54.

In comparison with the last month the barometric pressure was less, the mean velocity of the wind in miles increased from 7.9 in March to 17.4 in April, the temperature also slightly increased, humidity remained almost the same, the rainfall was less than the normal mean which was 1.54.

The Meteorological Reporter to the Government of Bengal observes: "The weather during the month was characterised by great uniformity. With almost constant high day temperatures in South Bihar and Chota Nagpur a persistent area of low pressure maintained itself in that quarter, causing a very strong indraught of humid air from the Bay with a circulation giving south-west winds in the south-west portions of the Province, while over East and North Bengal and Assam, the directions curved from south through south-east and east to north-east. Owing to the persistence of these conditions during the greater part of the month the winds at the head of the Bay were largely above normal strength, while the rainfall, copious in Assam and the northern and eastern parts, was extremely scanty, over the remainder of the province."

The mortality during the month of April was as follows: In the week ending the 2nd April, cholera 101, plague 544, small pox 3, fevers 116, bowel complaints 62, total deaths 1,015. In the week ending the 9th April, cholera 104, plague 539, small pox 4, fevers 66, bowel complaints 85, total deaths 1,038. In the week ending the 16th April, cholera 128, plague 500, small pox 13, fevers 78, bowel complaints 59, total deaths 1,015. During the week ending the 23rd April, cholera 102, plague 440, small pox 5, fevers 92, bowel complaints 56, total deaths 912. In the week ending the 30th April, cholera 103, plague 270, small pox 5, fevers 88, bowel complaints 67, total deaths 738.

In the week ending the 2nd April, the ratio of deaths to one thousand population was 64.0, in the next week 63.6, in the week ending 16th 63.2, the next gave 55.9 and the last 45.2. In the last week of March ending with 26th, cholera had 61 deaths. During the week ending the 2nd April it was 101, in the next 104, succeeded by 128, 102 and in the last week of the month 103. The increase of mortality though greater than the last month was almost stationary during the month except in the

week ending the 18th April. The general increase, more than the last month, may be ascribed to the greater velocity of the wind. The sudden rise in the week ending the 16th, is probably due to the high temperature in south Bihar and Chota Nagpur which influenced Calcutta. The sudden fall may be said to have followed the following occurrence: "On the other hand as soon as the showery and cloudy weather had established itself in the eastern half, day temperatures naturally fell, while the humidity of the atmosphere helped to maintain the minima at a level above the normal, which was, however, counteracted to a certain extent by the low minima which occurred when rain actually fell during the night. The general result is that while mean maxima are in excess in the western half and in defect in the eastern half of the province, mean minima are above the normal over the whole province, the excess, however, diminishing to zero as we approach the extreme east and north east of the province."

At any rate it was almost certain that Calcutta was affected by the low temperature which prevailed in the eastern half of Bengal. That state of the weather could check the spread and influence of cholera bacilli. This state occurred just after 17th April.

In the week ending the 26th March, there were 471 deaths from plague. By the end of 2nd April it rose to 544; in the week ending the 9th 539, by the 16th the number decreased to 500, by the 23rd it came to 440 and by the 30th to 270. The deaths lessened to nearly the figure in the middle of March, which was 230. It should be said that the showers of rain in Calcutta and outside during that period produced a wholesome check. In the week ending the 26th March, death from fevers rose to 112; by the end of 2nd April it was 116, by the 9th 66, 16th 78, 23rd 92, and 30th 88. The decline of the mortality was sudden in the week ending the 9th April. This may be said to be due to the fall of temperature from cloudy skies though the showers came on a few days after. The little variations are not easy to explain. They may be due to many causes. The slight increase afterwards may be ascribed to the attack of cold. The bowel complaints gave 85 deaths by the week ending the 9th April, and afterwards it came to 57.

The influence on general mortality during and after the fall of the temperature was most marked. In the week ending the 2nd April, it was 64 per mille, in the next week 68.6. During the week ending the 16th 62.2. By the end of the 23rd 55.9; and by the 30th April 45.2. From the beginning of the month to the end, the mortality was 19.8 less per thousand population.

(To be continued.)

COMMON DISEASES AND THEIR TREATMENT:

V.

(Continued from Vol. xxiii, No. 8, p. 812.)

Ignatia is a medicine though often used yet remains to be identified. It was introduced by Camilli, a Jesuit priest in 1899. It is now two hundred and five years, the exact identification of the tree has been neglected. It comes from the Philippine islands, now in the possession of the Americans, who are foremost in the cause of homoeopathy. We expect that some of our American colleagues will undertake the task. The name of the tree seems to be *Faba Indica*. The appellation is from the order of St. Ignatius to which Camilli belonged. It is time that we should call it by its proper name.

It seems that *Ignatia* has never been used in inflammation. In rheumatic fever, it has been administered having the sensitive-mental disposition with success. There are symptoms which suggest on pathological grounds its use in inflammation, traumatic or idiopathic. They are: Insupportable pains in the bone and joints of the arms, as if the flesh were being loosened, or with paralytic sensation and pain of dislocation (on moving the arm). Limbs swollen, thigh knotty, cannot get up or lie down without pain. Pain in sacrum when lying on back, sprained pain in shoulder, hip and knee joints. Pain in shoulder-joint on bending or on back as after violent exertion or as if bruised. Stiffness of neck (Sill). Simple and violent pain, in various parts, when they are touched. Incisive or acute, and sometimes hard pressive pain (as from a hard pointed body pressing from within to without); in the limbs and other parts. The prominent symptoms are pain as of dislocation or of a sprain in the joints, and jerking on falling asleep (cham). The pains are aggravated by the use of coffee, tobacco and brandy. Noise produces an increase. The nocturnal aggravation is marked. Sensitive, delicate, morose and lachrymose dispositions are the keynote for its use. Despair of being cured is an additional indication. A valuable hint has been given by Hahnemann. "It is best administered in the morning if there is no hurry. When given shortly before bed time it is apt to cause too much restlessness at night."

It is necessary to mention the suggestion of Dr. Gilchrist in the use of *Ignatia* in traumatic delirium on the following symptoms: "Great tendency to start; boldness; the slightest contradiction irritates; ill humor and anger, impatience, irresoluteness; quarrelsome; intolerance of noise; sadness; weeping and laughing almost in one breath; sweat on the face; face pale, red or bluish; involuntary sighing."

As to the stiffness of the neck the undermentioned remarks of Dr. Wm. Bayes are noticeable: "stiffness or pain in the nape of the neck, with a tendency to spasmodic closure of the jaws, and waking the patient out of sleep is a symptom often cured by *Ignatia*."

One fact in the inflammation of *Ignatia* is that it does not produce the high heat of acute inflammation. It is rather of a low form without sufficient heat, redness and swelling. The pain may be intense but the external symptoms do not speak out the actual fact. Its action on the inhibitory function of the *vagus* is marked by the regulation of blood supply. The exaggerated activity of the sympathetic nerves is restrained. In fact, the co-ordination of the functions of the two nerves is affected. Dr. Dunham in his Lectures on *Materia Medica* says: "Upon the vital power its action is not so much exalting or depressing, although in certain organs each of these varieties of action is distinguishable; but rather disturbing, destroying the harmony of action between portion of the organism perverting the co-ordination of functions. Thus, where we find heat of the body, and should anticipate such a condition of the nervous system as would make cool air agreeable, the contrary condition obtains; where we should, from the fever existing, expect thirst, we find none, and *vice-versa*. The great sensitiveness of the surface instead of being aggravated by contact and by pressure, is relieved by it."

The amelioration symptoms are, the pains are removed either by lying on the back, or by lying on the part affected, or on the healthy side, and always by change of position, are more applicable to nervous pains than to inflammation. The only fact which relieves any inflammation, where *Ignatia* is applicable, is the constant change of position. The actual pain may not be much but brooding on his difficulties makes him worse. Sleeplessness due to all these causes is an accompaniment. The intensity of the pain is greater in coffee, which produces that sleeplessness, where it is impossible to court the soporific effects. The restlessness of *Ignatia* can be checked by the force of the will, which can command rest. The personality in *Ignatia* is present but apt to be lost by melancholic meditations. In coffee, the personality is wanting by overhearing pain, a hyperæsthesia of the nervous system. There its use is akin to that of *chamomilla*. The positive inflammatory pain can only be checked by *Aconite*.

Ignatia has another noticeable feature with regard to inflammation. The jerkings appear on falling asleep. There it retains a similarity with *chamomilla*. In fact, *Ignatia* is never thought of, where it is most useful. Instead of it other medicines are administered with partial effect.

Indigo is largely used in India, as local application in superficial inflammation, abrasion, and ulcers of horses and cattle where it produces beneficial effect. Following that method, low class of people in India resort to it in those diseases as a tropical remedy. It must be said that Indigo has power to reduce inflammation, which is supported by observation. On the other hand, Indigo produces redness, inflammation and tension of the veins of the hands. It is not a known fact whether it has the power to induce general inflammation of the minute arteries, arterioles and veins. The leading indication for the use of Indigo is pain in the limbs decidedly worse after every meal. Following that hint a case of general stiffness was cured. We read in Clarke's *Materia Medica*: "A case narrated by Nash (*Med. Adv.* XVIII, 223) brings out one of the characteristic conditions of Indigo. A hard working man, over 70, gradually became unable to work. Weak; stiffness all over, especially right side, arm and leg. Pain in right hip running down leg; worse from beginning to move after resting. Can hardly turn over in bed. Appetite poor; stomach distressed, four or five hours after eating, if he eats more than a very little. *Pains in the limbs decidedly worse after every meal.* Indigo cured promptly." The attenuation of Indigo which cured the case has not been mentioned. The supposition is that it is a low one, for the medicine is generally used in a low form.

Indium has bruised feeling in certain parts of the body. They are, bruised feeling of brain in vertex better in cold air; bruised pain in the eyeballs worse on moving eyes; bruised pain in the testis, they are tumefied and very tender to the touch; pain in the sternum; and constant pain in the shoulder joint as if bruised. These bruised sensations may lead to the use of the metal.

Iodium has the power to produce inflammation, ulceration, and gangrene, successively. The following case from Hempel and Arndt shows the phenomena: "A woman took the tincture of iodine to remove her obesity, six drops three times a day, and afterwards thirty drops daily for eight weeks, in all two ounces of the tincture. First she was attacked with a large furuncle between the scapulae and considerable inflammation of the surrounding parts (with loss of appetite and sleeplessness); the furuncle detached itself from the skin after the application of warm poultices, in the shape of hard, knotty bodies, having deep and painless ulcers which refused to heal; afterward, she suddenly experienced a violent pain in the big toe of the right foot, increasing in violence and passing, on the day following, to the other toes; the toe which had been first affected became less sensitive, then cold, lastly black, with sudden supervention of a typhoid fever, the gangrene rising up to the thigh with horrid

pains, the leg becoming black as pitch and icy-cold, until finally the tibia and fibula broke while the woman attempted to turn herself in bed; the whole limb dropping off; every spot which had been scratched became dark brown, and the ulcerated places, remaining after the furuncles, became likewise gangrenous." This, indeed, is an extreme case showing the slow poisonous effect of Iodine.

Iodine has the following additional symptoms: Drawing tearing in the shoulder; arm and part of the hand swollen; pain in the bone on the outer side of the arm; hands red; pain as from blow on metacarpal bone; tensive pain in finger joints as if they would break on bending, with swelling and pain on pressure when stretched; swelling of legs; tearing on sides above malleoli; pain in tibia as if suppurating; leaden heaviness of legs; inflammatory swelling of the knee, with tearing pains and suppuration; hot bright red swelling of the knee with inflammation pricking and burning, worse by touch and pressure.

Allen has the undermentioned clinical symptoms: "Sub-acute inflammation of the knee with fistulous openings discharging bloody serum, nightly boring pains. Housemaid's knee. Scrofulous affections of the joints. Affections of the joints or of the articular extremities of the bones, following mercury or syphilis."

Hempel and Arndt write: "*Scrofulous inflammation of joints*, knee, hip, elbow and other joints, may require iodine for their cure. The joint is swollen, looks red, more particularly of a dark-red color; effusion may have taken place. The patient complains of great pain, an aching, throbbing sore pain. The inflammation is of a torpid character, the fever moderate."

(To be continued.)

OBITUARY.

Bepin Behary Maitra, M. B.

We deeply regret to notice the death of Dr. Bepin Behary Maitra, a graduate of the Calcutta Medical College. It was purely by his devotion to homoeopathy that he earned a reputation which will be worth while for the younger colleagues to follow. He adopted homoeopathy observing the cure of his uncle by Dr. Salzer in 1886. He published many homoeopathic books in Bengali which gave him an arduous study without much remuneration.

He died at the early age of 52, on the 2nd September, having suffered for a fortnight. On the 18th August, he had an attack of apoplexy, and though seemed to be improving, it was a deceptive sign. It is said that he died of failure of heart's action.

EDITOR'S NOTES.

Poisoning by "Fool's Parsley" (*Aethusa cynapium*).

On July 1st, 1904, I received a message to attend E. W., aged 23, domestic servant, and found her to be suffering from severe abdominal pains with persistent vomiting and diarrhoea. The vomited matter was green stained. The patient was extremely collapsed. Surface cold, radial pulse absent, heart beating at the rate of 120 times a minute, heart sounds very feeble. The temperature was so subnormal as to be incapable of being registered by the ordinary clinical thermometer—the mercury not rising to the 95° F. graduation mark. On inquiry I elicited the fact that on the previous day the patient had eaten a considerable quantity of a herb gathered in the kitchen garden attached to the house, which she believed to be "mustard and cress." This proved to be "fool's parsley" (*Aethusa cynapium*) of very young growth. The symptoms of poisoning did not come on until some twenty hours after ingestion.

Morphine (for the pain) and stimulants were administered, and the patient made a speedy recovery.—*Brit. Med. Journ.*, July 16, 1904.

Monkseaton, Northumberland.

H. E. DAVISON, M.D.

Deaths in Battle During Last Century.

The genial and learned Professor of Physiology in the Faculty of Medicine in Paris, Professor C. Richet, once wrote a novel and made a forecast of the probable condition of the world a hundred years hence. An ardent lover of peace on earth and an eloquent apostle and advocate of the doctrine of goodwill among men, Professor Richet has been "looking back" over the past century and reckoning the death toll due to wars during the enlightened nineteenth century. He estimates the grand total to be about 14,000,000, made up as follows: Napoleonic wars, 8,000,000; Crimean wars, 300,000; Italian war, 300,000; American Civil war, 500,000; Franco-German war, 800,000; Russo-Turkish war, 400,000; civil wars in South America, 500,000; various colonial expeditions in India, Mexico, Tonquin, South Africa, etc., 3,000,000. If to these who died in the "stricken field" we add the number of "broken" disabled soldiers, the widows and the children who suffered, we have indeed a huge budget of slaughter, a record of Christian activity, that almost makes one despair. The new century seems to have started as if it intended to maintain the record.—*Brit. Med. Journ.*, July 2, 1904.

Experiments on the Cooking of Meat.

The United States Department of Agriculture has published an interesting report by Professor Grindley and Mr. Mojonnier on a series of experiments initiated to determine the losses that occur during the cooking of meat. The methods of cooking employed were boiling, roasting, sauteing, and pan-broiling (i.e., cooking in a frying pan without fat). The main conclusions arrived at are (1) that pan-broiling is the form of cooking that causes the least loss of nutritive material; (2) that the chief loss in weight during boiling, sauteing, and pan-broiling is due to removal of water, and in roasting to the removal both of water and of fat; (3) in all the forms of cooking the losses increase in proportion to the degree of cooking; and (4) that when meat is cooked in water at 80°-85°C, it makes little difference whether the meat is placed in cold or hot water to commence with. Beef cooked in water loses from 3.25 to 12.7 per cent. of nitrogenous matter, from 0.6 to 37.4 per cent. of the fat, and from 20 to 67.4 per cent. of the salts; that is, these amounts pass into the broth. When meats are roasted from 0.25 to 4.5 per cent. of the nitrogenous matter, from 4.5 to 57.5 per cent. of the fat, and from 2.5 to 27.2 per cent. of the salts were found in the dripping. Beef which had been used for the preparation of beef-tea was found to have lost comparatively little in nutritive value, though much of the flavouring material had been removed. The nature of the nitrogenous constituents and other substances has not yet been fully determined, though much work has been devoted to their elucidation.—*The Lancet*, July 23, 1904.

Hindu Versus Chinese Surgery.

The following letter appears in the *British Medical Journal*, August 13, 1904.

Sir,—In your commentary on Dr. Rockwood's address on Hindu surgery it is stated that "of all the nations of the world the Hindus were the first who turned their attention to the study of diseases and their treatment." This is very possibly true, but the evidence we have points to the Chinese as the oldest physicians of which we have any record. Dabry in 1863 published *La Médecine chez les Chinois*, in which he gave an account of Chinese medicine obtained from the writings of the Emperor Hoang-ty 2637 B.C. Here we learn that the Chinese treated syphilis by mercurial inunction, much as we do now. The Hindu *Ayurveda*, containing the writings of

Susruta, dates back, according to Hessler, who translated it into Latin, about 1000 B.C. (*Ayurveda id est Medicinæ Systema a venerabili Dhanvantari demonstratum, a Susruta discipulo compositum.*) Dhanvantari appears to have been looked upon as the god of medicine in India. One of the most interesting points in this book is the statement that small-pox was well known to the ancient Hindus, and was treated by vaccination, thus anticipating Jenner by many centuries. An account of these subjects may be found in Bisset's book on *La Syphilis aujourd'hui et chez les Anciens.*—I am etc.,

London, W., July 25th.

C. F. MARSHALL.

It is evident that Hessler has made a mistake in ascertaining the age of Susruta. In Manu Sanhita there are passages which describe Chinese as degenerated Kshatriyas. They migrated from the Bramhavarta (the Panjab) at that distant time. This explains the anomaly of Hessler. The Chinese must have carried their stock of medical knowledge from the ancient medical Rishis among whom Varadwaj and Susruta are the progenitors of medical science.

Preventive Work in the Tropics.

At the congress of the Royal Institute of Public Health, Dr. W. J. Simpson, Professor of Hygiene in King's College, London, presided over the section of Tropical Medicine and took "Preventive work in the Tropics" for the subject of his address.

He pointed out that sanitary measures, irrespective of the microscope and the laboratory, had achieved great triumphs. In the West Indies the lifetime of a regiment 1000 strong used to be estimated at about five years. This mortality, first ascribed to the climate, was shown to be due to removable causes and by improving the food-supply and water-supply and remedying the overcrowding, a very different condition of things was brought about. In India the death-rate of the soldier had fallen from 80 to 16 per 1000. Dr. Simpson then detailed the great discoveries that had been made in tropical medicine in recent years, in cholera, plague, and Malta fever, in malaria, yellow fever, and sleeping sickness, and discussed the measures that were being taken and the results obtained in the campaign against malaria. Speaking of the Haffkine prophylactic against plague he said he doubted whether a fluid that had to be inoculated would ever be largely used on account of prejudice against this mode of administration and advocated experiment in the direc-

tion of finding something that would be efficacious when taken by the mouth.

As a result of the discussion that followed the section adopted this motion ;—

That this section of Tropical Medicine recommend the council of the Royal Institute of Public Health that it is desirable to approach the Secretary of State for India and Lord Curzon and lay before them the importance of a largely increased special sanitary service for India.

Dilatation of the Stomach.

Dr. ALEXANDER CROMBIE (London) read a paper on *The Frequency and Causes of Atonic Dilatation of the Stomach in the Tropics*. This he ascribed especially to the habit of over-drinking at meals, some 50 per cent. of the cases being attributable to this cause alone. As an instance he said that at dinner many men thought nothing of taking half a pint of soup, two pints of aerated water during an otherwise ample dinner, and another pint or two pints of the same within the next one and a half hours. A similar distension of the stomach was practised, to a less degree perhaps, at breakfast and lunch, with the result that the organ in the course of a few years of such treatment accommodated its mechanical capacity to the demand made upon it. Digestion was at the same time delayed by this inordinate dilution of the gastric juice and sooner or later the stomach failed to empty itself before it was again deluged in a similar manner. Other causes were typhoid fever and neurasthenia.—*The Lancet*, July 30, 1904.

The Patent Medicine System on the Continent.

Sir—It may be of interest to some of your readers to have some authoritative information with regard to the system pursued by the authorities in France and Germany.

The following notes have been kindly furnished me by the courtesy of the Foreign Secretary (Lord Lansdowne). They appeared for the first time in the *Medical Guild Quarterly* for April, 1903.

With regard to the sale of patent or quack medicines in France the law of July 14th, 1810, prohibits the sale in France of all secret remedies the composition of which is not published in the official *Codex*. In point of practice, however, this prohibition is not strictly carried out, for many French patent medicines are sold by chemists in France with the tolerance of the authorities. As regards foreign

patents the French Customs Tariff states that the importation of all which do not appear in an official pharmacopoeia is prohibited. Then again, however, a certain tolerance is shown and there is no difficulty in obtaining in France most of the foreign patent medicines provided they do not contain any poisonous substance. The usual practice for persons asking to import these medicines is to address themselves to the Ministry of Commerce, sending at the same time a statement of the composition of the medicine, and should it contain no noxious matter its importation is often authorized.

With regard to Germany, the following is the memorandum. The following regulations are here in force with regard to the trade in patent and quack medicines. According to Section 11, No. 9, of the Imperial Trade Regulations, drugs and quack medicines may not be sold or offered for sale by hawkers. Medicines including these quack remedies that are to be regarded as medicines must not be offered for sale or sold except in chemists' shops in accordance with the Imperial Decree enclosed on October 22nd, 1901, respecting the trade in medicine in so far as they belong to the preparations or materials enumerated in sections 1 and 11 of this decree. Furthermore, in accordance with the regulations put into force simultaneously in all the Federal States respecting the dispensing of stringent medicines, patent and quack medicines, in so far as they contain drugs or preparations of the kind enumerated in the notice in question, may be dispensed on a physician's preparation, dated and signed.

In the year 1895 the public advertising of quack medicines intended for the prevention or cure of venereal diseases in men was forbidden in all the Federal States by uniformly worded police regulations. There are besides in force in the Federal States a number of other older local regulations whose wording differs from another with regard to the trade in medicines and quack remedies. But there is no special authorization given to the trade in patent and quack medicines within the Empire based on any previous examination, nor does any stamping of them for this purpose take place. A general uniform rule to be observed in the trade in patent and quack medicines is now being prepared. The proceedings in regard to this have not yet been completed. The regulations will be published as soon as the notice in question has been decided on in the Federal Council.

Perhaps, Sir, some of your foreign correspondents will be able to inform us what the purport of the new regulations is.—I am, etc.,

Cardiff, June 24th.

T. GARRETT HORDER.

Brit. Med. Journ., July 2, 1904.

Shakspeare and Physic

By DR. PROCTOR.

DR. DUDGEON's article on this subject called to mind a very scholarly and scientific little treatise on *The Shakspeare Flora* (Simpkin, Marshall & Co.) by Mr. Leo H. Grindon, in which the medicinal aspects of the subject are dealt with, along with a wide range of literary references which go to make a very charming volume. Any one interested in this branch of Shakspearean lore will be certain to find the book delightful reading. Respecting the word "hebenon" which Dr. Dudgeon refers to, the following extract from Mr. Grindon may be of interest to some of your readers:—

"What kind of liquid poison Shakspeare intended by 'hebenon,' has been a subject of much conjecture, opinions oscillating between henbane and poisons in general, those who hold the latter view overlooking the minute description of the symptoms and pathological results. The word in question is a varied form, not of henbane or, as some suppose, of 'ebony,' but of the name by which the yew is known in at least five of the Gothic languages; the name which appears in Marlowe, Spenser, and other writers of the Elizabethan era as 'hebon':—

'In few the blood of Hydra Herne's bane,
The juide (? juice) of hebon, and Cocytus' breath
And all the poisons of the Stygian pool.'

(*Jew of Malta.*)

And which in the first quarto itself is spelt hebona. The yew, says Lyte, translating Dodoens, is called in High Dutch, *ibenbaum*; and accordingly in base Almaine, *ibenboom*. 'This tree,' he goes on to say, 'is altogether venomous, and against man's nature. Such as do but only sleepe under the shadowe thereof become sicke, and sometimes they die' (Herbal, 1578).

"The extract is used, he says further on, 'by ignorant apothecaries, to the great perile and danger of the poor diseased people' (p. 768). From the latter sentence we may gather how the murderer was enabled to possess himself of the deadly juice, which he is not to be supposed as preparing with his own hands, but as procuring from one of the herb-doctors who kept it for sale. Why Shakspeare should say 'hebenon' instead of 'yew' does not appear, nor does it signify. The scene being laid at Elsinore, perhaps he was careful to employ a word believed or known to be Danish."

In a note to this Mr. Grindon says: "The above teaching as to the true sense of 'hebenon' has been before my pupils for at least

twenty-five years. It was with great pleasure that I saw my views confirmed in the report of a paper read by the Rev. W. A. Harrison before the Shakspeare Society, May 12, 1882."

In another place where he treats of the Violet in Shakspeare, Mr. Grindon says: "'Crants,' a word found nowhere else in English literature, is a varied spelling of the German and Danish 'Cranz,' a garland. That it should occur in the same play as 'hebenon' is at least a curious coincidence." Whether Mr. Grindon's opinion be held to settle the question or not, his criticism is illuminating, and his query why "hebenon" was used instead of "yew" suggests the probability that Shakspeare was here exercising his supreme talent for selecting the right word, choosing that one which not only has the local colour, but lifts the verse above the level of the tribe and commonplace.—*Homeopathic World*, July 1 1904.

Pasteur Monument in Paris.

THE monument to Pasteur in Paris was inaugurated on July 17th, in the presence of the President of the Republic, and was the occasion of an imposing international homage to the illustrious *savant*. Among those who came from abroad were Behring (Berlin), Bordet (Brussels), Percy Frankland (Birmingham), Paul Herger (Brussels), Von Ermanger (Gaud), Lydtin (who placed a wreath in the name of the German veterinary societies), and many others. In the official stand the president was surrounded by the Presidents of the Chambers of Deputies and of the Senate, M. Combes (the President of the Council), MM. Chaumie, Valle, Rouvier, and other Ministers; Dr. Roux, Professor Chantelesse, Professor Brouardel, Dr. Chamberland, Dr. Metchnikoff, and most of the members of the Academie de Medicine and University. In the stand facing the official tribune was seated Madam Loubet beside Pasteur's widow; his son and other members of the family were also present. The international subscription soon reached £14,000 and the work was entrusted to the celebrated sculptor Falguiere, and the plaster model of the monument was his last piece of work, the task being finished and carried out by Victor Peter. The monument is erected facing the dome of the Invalides in the Place Breteuil, on the site of the artesian well of Grenelle. The height of the monument is altogether nearly 23 ft, the pedestal being about 14 ft. high. Pasteur is represented seated. On the face of the pedestal is the single inscription: "Pasteur, 1822-1895. Erected by international subscription." The pedestal

is surrounded by fine groups in high relief; at the front is the figure of a woman representing Humanity holding a child in her arms imploring the help of him who was able to discover efficient arms against Death. On the other three sides of the pedestal are represented pastoral scenes, a shepherd playing a pipe while the sheep are feeding at his feet; a young oxherd leaning lazily against two powerful oxen; a reaper at rest in the harvest field, thus symbolizing agriculturists who, thanks to the discoveries of Pasteur, are able to live in security, protected from the scourges which devastated their vineyards, their harvest, and their cattle. The President arrived punctually at 10 a. m. and the ceremony, which included eleven discourses, lasted till nearly midday. N. Wallon, Senator, and Perpetual Secretary of the Academie des Sciences, in the name of the Committee handed over the monument to the City of Paris. M. Desplas the President of the Municipal Council, made a speech in thanks. Then M. de Selves, Prefect of the Seine recalled the Jubilee of Pasteur on December 27th, 1902, when in the large amphitheatre of the Sorbonne, suddenly a door opened and President Carnot entered leading Louis Pasteur, the good genius of his age. He then recalled the moment when Lister gave to Pasteur the fraternal kiss of science, a homage of universal admiration. Among the other speakers were M. Mascart, President of the Academie des Sciences; Professor Chantemesse, in the name of the Academie de Medecine; M. Georges Perrot, Director of the Ecole Normale, where Pasteur entered as a student in 1843; Professor Grancher; Professor Errera, of Brussels, representing the foreign subscribers. Before leaving, the President walked across to where Madame Pasteur was seated in mourning, and with emotion presented to her his homage and pressed her hands.—*Brit. Med. Journ.*, July 23, 1904.

A Case of Acute Arsenical Poisoning.

BY R. E. SEDGWICK, B.A., M.C., B.C., CANTAB.,
LATE SENIOR HOUSE PHYSICIAN AT THE GENERAL HOSPITAL,
BIRMINGHAM.

DEATHS from acute arsenical poisoning are sufficiently rare to make the notes of such a case and of the subsequent post-mortem examination of interest and value.

On March 24th, 1903, at 5.30 A.M., I was called to see a man reported as "very ill and almost dying." On arrival at the house, 20 minutes later, I found the patient on his bed, dead. He was lying

on his back with his left knee drawn up and his arms extended. His hands and feet were cold, as were also his nose and face, while his body was warm. He was well developed and well nourished but his eyes were sunken far in their sockets and a general pinched expression on his face gave him an appearance such as is frequently seen in a child with epidemic diarrhoea. The room was poorly furnished but clean; there were no signs or traces of vomited matter or fæces either in the chamber (which was empty) or about the floor and bed. On the dressing table was a glass of mineral-water bottle containing about two drachms of slightly milky fluid.

The history obtained was as follows: The patient, who was a labourer at a glass-works, had always enjoyed good health. On March 23rd he was quite well, had his breakfast with the rest of the family (who were well), and went to work. He returned home about 2-30 P.M. and vomited in the entry, stating that he was "bilious." He continued to retch and to vomit and was then given a bottle of "ginger beer," after which he seemed more comfortable and dozed on the sofa. Shortly afterwards he had great abdominal pain, was violently purged, and again sick. He continued to be purged and sick until about 8 P.M., when he went to bed but without relief. As he became so weak he was asked to see a medical man but declined, stating that "he didn't want one as he was going to die." At 5 A.M. on the next morning he became so "bad" that I was sent for. All inquiries led to no elucidation of the mystery and the body and the bottle of "mineral water" were removed to the mortuary by the police and the facts were duly notified to the coroner.

Necropsy.—On March 26th, two days later, I made a postmortem examination of which the following are the notes: The body was that of a well-developed, well-nourished man, aged about 32 years, height 5 feet 9 inches. It had been in the mortuary two days (48 hours). The weather was mild and damp. The eyes were markedly shrunken in the sockets and the face had a pinched expression. No putrefactive changes were visible and there was no post-mortem rigidity. Slight venous congestion was visible on the buttocks. There were no external marks of violence. The coverings and bones of the skull were normal. The brain showed no venous hypostasis and the membranes were dry. The brain substances were normal; there were no hæmorrhages or ecchymoses. The ventricles were dry; on section they were drier and firmer than normal. The lungs were dry and crepitant; there was no posterior hypostasis. At the apex of the right lung was an old scar which was white and

contracted. The pleurae were normal; there were no adhesions. The left cavities of the heart were empty. There were about half an ounce of blood in the right auricle and a little clotted material in the right ventricle; otherwise the heart was normal. The tongue was clean at the tip and sides; it was slightly furred at the back. The pharynx and oesophagus were normal; no redness or hæmorrhages were present. The stomach contained about a pint of yellow turbid fluid in which were floating several large, whitish-yellow, opaque masses. Some mucus settled on standing in which were a few green-coloured particles. The external wall of the stomach was pink in colour except for about two inches along the pyloric third of the greater curvature where it was of a dusky scarlet colour. The mesenteric glands along the greater curvature were enlarged to sizes varying from that of a bean to that of a Brazil nut and were soft, cherry-red in colour, and on section almost diffuent. Internally the mucous membrane of the stomach was thrown into folds and was generally reddened and covered with a thin layer of slimy mucus. In five or six places were patches of ecchymoses and petechiæ, chiefly lying along the greater curvature and the posterior wall, while in three places were adherent, whitish-yellow, opaque masses, surrounded by an area of scarlet-coloured and reddish-brown membrane, the largest and firmest of which corresponded to the scarlet-coloured patch on the outer wall of the greater curvature. There were no traces of food nor was there any characteristic odour. The duodenum in its first two parts was coated with slimy mucus and of brilliant red colour internally, the redness on close inspection being due to minute petechiæ. The outer covering was bile-stained and reddened. The third part together with the jejunum was completely empty except for the mucus which, indeed, lined the whole of the intestinal tract. The ileum in its lower 12 inches was slightly reddened and on one spot about eight inches above the ileo-cæcal valve was a small crater-like ulcer of the size of a pea with a smooth base and a ragged, vivid scarlet edge. Two of the neighbouring glands were swollen, soft, and red. The large intestine was empty; there was no trace of ulceration. The liver was normal in appearance; it was dry on section. The gall-bladder was empty. The pancreas and spleen were normal. Both kidneys were normal in appearance. The capsules stripped easily. The kidney substance was apparently healthy on section. A few rather bright red points of congestion were visible at the ends of the pyramids. The bladder was empty.

An inquest was held but was adjourned pending an analysis of the stomach contents, &c. At an adjourned inquest held on April 28th inquiry elicited that the man, an agent for an insurance society, was in monetary difficulties and had been threatened with legal proceedings. He had also been seen standing near a barrel of ready-mixed "frit" (which contained arsenic) at the works about 1-130 A. M. He also vomited about noon and once or twice between noon and 1 P.M., when he left work.

Mr. H. Silvester, public analyst of the county borough of West Bromwich and Dudley, reported as follows:—

1. *Contents of stomach*.—One pint. Arsenic was present to the extent of 2·17 grains, expressed as arsenious anhydride (As_2O_3).

2. *Portion of liver* (weight eight and a half ounces).—The portion of liver contained arsenic equivalent to 0·45 grain of arsenious anhydride.

3. *Left kidney* (weight six ounces).—The kidney contained arsenic equivalent to 0·07 grain of arsenious anhydride.

The total amount of white arsenic found was as follows: stomach contents, 2·17 grains; liver (portion of), 0·45 grain; and left kidney, 0·07 grain; total, 2·69 grains.—*The Lancet*, July 30, 1904.

CLINICAL RECORD.

Foreign.

ANACARDIUM ORIENTALE.

By Dr. Stauffer, Munich.

Translated for the HOMOEOPATHIC RECORDER from *Allg. Hom. Zeit.*,
July 28, 1904.

We excerpt the following interesting cases from a more lengthy article on this subject :

In a former number in this journal I found in a dissertation of a French colleague on stomach troubles an observation on *Anacardium orientales* intimating that this remedy has not been much approved in stomach troubles. I could not agree with that author, as I had found in *Anacardium* a very reliable remedy, and my continued successes with this remedy in dozens of cases since led me to speak up for this remedy and to recommend it to my colleagues.

I herewith submit the following clinical cases:

I. Mr. Sch., fifty-eight years of age, a manufacturer, is on a strain from mental and bodily activity, from early in the morning till late at night. Since three years he has had stomach troubles, and having undergone various treatments, he finally came to me on January 11th, 1903. He complains that almost every day from 11 A.M. to 5 P. M. he has cramp-like pains in the stomach. He has nausea in the morning and disinclination for work in the forenoon; much eructation, mostly somewhat bitter, without giving any relief; formerly he suffered much from heartburn and from acidity of the stomach. Lately the cramps in the stomach and the pains have grown considerably worse. He feels worse after prolonged mental exertion and when the stomach is empty; but when he eats he at once feels a relief and this continues for about two hours; then slowly the pressure in the stomach reappears, which gradually increases until it becomes unbearable. The appetite is always very good and the stool regular. The sleep before midnight is not good, and he is late in falling asleep, but sleeps well early in the morning; but he is weary when he awakes. Hæmorrhoids. Prescription: *Anacardium orient.* 6 D. dilution, two drops morning and evening; with the direction to stop taking the medicine as soon as an improvement results.

January 18, 1904. The patient states that the first doses caused a violent medicinal aggravation which gradually subsided after three hours. Early next day he again took the medicine, but he has had

no attack since. Nearly a year and a half have passed since then and the ailment has not since returned, for I had opportunity to observe the case.

II. Mr. B., forty years of age, director of a large institution, hardly ever leaves his office; his duties are very exacting and he has great responsibilities. On the 17th of January he came under my treatment, after having spent several months during the preceding summer in sanatoriums and climatic curative institutions, on account of a chronic ailment of the stomach and intestines of several years' standing. In earlier years he had suffered from malaria while in Hungary, and had used quantities of *Quinine*. Since late years he has had chronic catarrh of the stomach, also inert digestion, and continuous constipation alternating with diarrhoea. Now he particularly complains that his memory has suffered much, as well as his ability to work. After moderate mental work he feels a pressure in the frontal region; there is general weakness and drowsiness by day, especially after meals. At night he has vivacious dreams, which by day he often thinks were reality. Peevish, hypochondriac. No pleasure in life; full of anxiety about the future.

The greatest trouble is caused by the stomach. He is voracious, yet his appetite is at once satiated. Before meals the contractive pains in the stomach are worst; through eating there is an immediate relief lasting for three hours; there is drowsiness in this period. Afterwards the ailment returns. Thus there are usually three periods of cramp-like symptoms every day. He has often to leave his work, because work aggravates the pains, and has to eat something. The stool at present is constipated, in the rectum there is a sensation, as of a dull pressure which he seeks to relieve by injections. There is a great tendency to catarrh of the air passages; coryza and cough every time he takes cold.

A careful examination showed excessive emaciation with considerable anæmia, an enlargement of the stomach and a relaxed state of the intestines.

January 17. 1903. Prescription; *Anacardium orient.* 3 D. dilution, three drops, thrice a day.

January 18. A considerable aggravation during the forenoon. *Anacardium* 6 D.

January 20. Slow improvement, but the pain increases every time he takes the medicine. I therefore gave *Anacardium* 8 D., three drops, twice a day.

January 22. The improvement continues. The pain is only

slight. Stool spontaneous. The appetite good and the food is well digested. *Anacardium* 8 continued.

January 30. General condition good, strength and mood are improved, he looks better. The stool is regular. *Anacardium* 8 continued.

February 15. Has taken up all his work again and feels well; the medicine is discontinued.

March 2, 1903. A relapse. The old symptoms suddenly reappeared. At first they only threatened, but during the last five days they have steadily increased. I repeated *Anacardium* 8, but without any effect. Also other potencies of the remedy refused to act.

March 5, 1903. A dose of *Sulphur* 10 D. I prescribed bodily and mental rest, since the patient had no doubt overworked himself. In the following days he received for several days *Lycopodium* 6, thrice a day, which was followed by a slow improvement. The pains however, which was only alleviated through eating, did not yield, in spite of the use of remedies characterized by the same remedy (*Chelidon.*, *Petrol.*, *Graphit.*, *Ignatia*). After resting for a week *Anacardium* 6, was tried again, and it acted again. In view of his overwork and strain, I now insisted on a furlough from his employment. The troubles in the stomach did not return afterwards and the continued use of *Carbo veg.* 6 D. and *Nux vom.* 6 D. completely cured the enlargement of the stomach. The stool had remained normal since the use of *Anacardium*.

I will briefly give two other cases, for when carefully viewed, the image of the disease was nearly always the same in all the many cases which I had an opportunity of observing.

III. A gentleman, sixty years old, of lively temperament, very active intellectually, complained in June 1901, about a lancinating and cramp-like pain in the stomach, which also only ceased from rest, and while eating and two hours afterward, then regularly returning. Obstinate constipation with a sensation as if the rectum was plugged. *Anacardium* 6 D. caused violent aggravation, but *Anacard.* 16 D. and 12 D. in one night took away all the symptoms, and they did not return.

IV. A servant in the chancellor's office had to go up and down stairs and to stand around all day; he also complained of this kind of cramps in the stomach, besides also of pressure, burning, lancination and formication up between the shoulderblades to the seventh

cervical vertebra ; worse when tired, better from rest and lying down,⁹ and from eating. *Anacardium* 6 D. removed all these symptoms in two days without any previous aggravation. * * * *Homœopathic Recorder*, September 15, 1904.

THREE INTERESTING CASES OF INTERMITTENT FEVER.

BY ROYAL E. S. HAYES, M. D., HAZARDVILLE, CONN.

CASE I.—Everett K., aet. 4 ; fair, plump, blonde. Had chills and fever every⁹ other day. After two weeks of cathartics and Quinine the chills had ceased, but only to return again two weeks later.*

TYPE : Tertian, ARS., PULS., chill predominates.

TIME : 2 P. M., ARS., PULS., (formerly 10 A. M., ARS., PULS).

PRODROME : Pallor.

CHILL : Lasts one hour.

Shivering, ARS., PULS.

No thirst, ARS., PULS.

Pain in stomach, ARS., Sil.

Vomiting during or just before chill, PULS.

Head hot, hands cold.

Cross, weeping, ARS., PULS.

FEVER : Short. Thirst for cold drinks, ARS., PULS.

SWEAT : Short, copious, ceases on waking, PHOS., ARS., PULS.

On upper part of body only.

APYREXIA : Pallor.

Tongue, sallow.

Smells sour. ARS., Puls.

MEDICINE : Puls. 50 M. (Skinner) one dose.

RESULTS : No chills thereafter.

CASE II.—Harold McA., aet. 10 years ; black hair, gray eyes, slender, active, wiry.

Had had three paroxysms of chills and fevers, besides Quinine and cathartics, of course.

*We have added below the indications for Ars. and Puls., not because we believe that Dr. Hayes was mistaken in his choice of Puls., but because it furnishes a most interesting study for beginners, some of whom would doubtless be much perplexed over such a case, where several symptoms strongly suggest Ars. What doubtless tipped the balance absolutely and conclusively in favor of Pulsatilla was probably the plump body and absence of intensely gloomy mental symptoms, and the fact that the little boy probably felt worse when the room was too warm. These are far-reaching generals, which would tend to strongly exclude Ars. And yet it is highly probable that he has in his make-up an Arsenic vein, inherited from one or the other of his parents, which at some later point in his life will show itself.

TYPE : Quotidian.

TIME : 3 P. M.

CHILL : Absent. (Were shaking chills previously.) Instead, sudden weakness and pallor, vomiting bile.

FEVER : Hot skin, red face, dry lips, thirst for small quantities often. Moans constantly from severe frontal headache. Sleepless all previous night.

SWEAT : Profuse.

APYREXIA : Pain in in abdomen > passing flatus.

Flatus very offensive.

One would hardly know there was a boy in the bed, he keeps so tightly buried in the bedclothes in all stages to escape the *chilliness which attends the least motion* (K. 1201).

Perhaps I erred in the time of giving medicine ; but the headache seemed so intense when I called that I administered Nux vom. 30, one dose, during the fever.

Profuse sweat followed with prompt disappearance of pain in head. He slept all night ; was nearly well next morning and has been well ever since.

[In cases where the symptoms have so little distinctive value, as most of those in this case, we may succeed in curing, but ~~we~~ can hardly be sure that we have found, as yet, the remedy which will most effectively and permanently *counteract the tendency* to these chills. To do this, we would have to go back farther into the past life of our patient or else wait for future developments—Ed.]

CASE III.—Mr. Blank ; aet 43 ; medium build, yellow hair, blue eyes, dirty, lazy, shiftless.

Had chills and fever for two months last summer, lasting until cold weather came.

Has not been able to work all this spring. Had an attack of bronchitis in the early spring which still continues.

Has become weak, pale, emaciated—has night sweats.

The fever seems to be taking away all his vitality and his neighbors say he has "consumption."

CHILL : Absent.

FEVER : Begins every day at 10 A. M. and continues until evening.

Emptiness and gone sensation in stomach.

Strength gives out at least exertion.

Is faint and hungry, but cannot eat < at 10 A. M.

Abdomen looks hollowed out, as though the viscera had collapsed.

Has attacks of faintness.

Tongue is coated, edges red.

These and many other symptoms.

Sul. 50 M. (Skinner), one dose.

He went to work in less than a week with no return of malarial symptoms to date.—*Medical Advance*, May 15, 1904.

Gleanings from Contemporary Literature.

IMMUNITY.

As discussed in the Meeting of the Pathological section of the British Medical Association, July 27, 1904.

The proceedings of the section were opened by the President, Dr. James Ritchie, who took *Immunity* for the subject of his address with the object of presenting a general review of the position of our knowledge in this branch of experimental research, pointing out that a general consideration of ascertained facts was rendered necessary owing to the divergent character of the studies, ranging from physical chemistry to hæmatology, now being prosecuted by different workers in the attempt to elucidate the problems involved. After paying an appreciative tribute to the genius of Ehrlich whose theories of immunity, though promulgated some six years ago, still dominated the whole situation. Dr. Ritchie stated the main points for consideration as : (1) the natural immunity observed in certain circumstances to exist towards disease ; (2) the artificially acquired immunity which came about in disease contracted under what might be called natural conditions of infection ; and (3) the relation of those conditions to recovery in any case of infectious disease. The solid basis of facts already arrived at regarding the process of immunisation was briefly summed up. Certain of the effects of some bacteria, and most of the effects of other bacteria, could be traced to extremely soluble poisons of unknown composition and which frequently possessed a selective action on special tissues and when injected into the body of a susceptible animal rapidly disappeared from the circulatory fluids, probably in consequence of their fixation in susceptible cells to which they sometimes travelled by special paths. By methods of immunisation an almost limitless degree of immunity could be developed in a sensitive animal, associated with the appearance in the serum of that animal of a "specific" substance capable of neutralising that toxin which stimulated its genesis. Further, that the neutralisation of toxin by antitoxin was of the nature of a chemical union but that such union was dissociable. The elaboration of soluble toxin was not, however, a universal characteristic of bacteria and in the case of most it was necessary, not only to neutralise poisons, but also to destroy the bacteria themselves if the animal body was to escape destruction. So far as concerned highly immunised animals it might be stated that the destruction of the bacteria was associated with the presence in the serum of the immune animal of two substances--a thermo-labile "complement" normally occurring in the animal species involved and a thermo-stable "immune body," specific in character and probably entirely absent in normal serum and which would act deleteriously only on the protoplasm which stimulated its formation. The reactions of these two substances on one another and on the bacteria to be destroyed were of a chemical nature and analogous to the interaction of toxin and antitoxin. The view that these bodies did not exist apart from cells *in vivo*, and the results of Walker, which strongly point to the leucocytes as the source of the complement, also the contention as to coincident and co-related cytotoxicity associated with extra-cellular destruction of bacteria, were commented upon. Contrasting the infective with the toxin-producing bacteria it was pointed out that though we were practically certain that the presence of toxin in the animal body stimulated the production of antitoxin we did not know what portion of bacterial protoplasm stimulated the production of bactericidal substances. Dr. Ritchie, still speaking of the infective bacteria, remarked on the inadequate importance attaching to the

metabolic aspects of the accompanying fever as compared with those dealing with the disturbances of heat regulation and suggested that part of the increased metabolism associated with infective fever might be the expression of work done by cells actively engaged in operating on the invading bacteria. Next the part played by persons in the production of the general effects caused by different infective bacteria was considered and it was pointed out that these poisons were for the most part intracellular and were probably derived from the breaking up of bacterial protoplasm which followed on death both in cultures and in the living animal and were responsible for what might be termed the non-specific effects of infective bacteria. Mention was made of the experiments of Pfeiffer and Kolle supporting the thesis that in the case of the infective bacteria the intracellular toxins which produced the pathogenic effects were not concerned in the production of the immunity which could be developed against these bacteria, for by appropriate dosage an immune animal could be made to exhibit the capacity of killing all the bacteria injected into it, and yet then succumb to the effects of the toxins which the death of the bacteria liberated from the bacterial protoplasm. After briefly commenting on the chemical reactions of toxin and antitoxin and contrasting the views of Ehrlich in explanation of the associated phenomena with those put forward by Arrhenius and Madsen, reference was made to what might be justly considered the three most important pieces of work bearing on immunity during the last year or so. First that by Meyer and Ransome which established the fact that tetanus toxin reached the nerve cells by the path of the motor axones only, while their further observations went to show that antitoxin was conveyed to the nerve cells by the much slower route of the lymphatics, thus explaining the experimental fact that the injection of a very large excess of antitoxin would not protect an animal against the subsequent introduction of even a small amount of tetanus toxin into a motor nerve—observations which if confirmed destroyed the theory put forward by Ehrlich that antitoxin was formed in the nerve cells. Next, the work of Muir on the interaction of the constituents of hæmolytic sera which went to prove that when corpuscles were thoroughly saturated with immune body it was possible to dissociate a certain amount of immune body and cause it to become attached to fresh corpuscles, and further, that when red blood corpuscles were saturated with both immune body and with complement still some of the immune body but none of the complement could be dissociated from the combination—observations incompatible with the view that immune body formed a link between corpuscles and complement. Finally, the work of Wright and Douglas, which consisted in the elaboration of methods of precision which had enabled them to study the laws which govern the phenomenon of phagocytosis and to demonstrate the presence in the serum of a substance they termed “opsonin,” whose function it was to unite with the bacteria, and by a process of sensitisation render them capable of ingestion by the phagocytes.

Dr. W. BULLOCH (London) was then called upon to read his paper on

The Cellular Aspects of Immunity.

Commencing with a chronological and historical review of the facts and theories dealing with the relationship of the body cells and fluids to the immunity problem, founded on a study of the original papers, Dr. Bulloch contrasted the sequence of the humoral and cellular theories of disease with a like sequence of theories as applied to immunity. He drew attention to the exhaustion theory of Pasteur which, based on observations of flask cultivations of the bacillus of fowl cholera, was insufficient to explain the process of immunisation as observed in the living animal, as it failed to account for the facts that immunity could be produced by means of the soluble products of bacteria and that the tissues of immune animals

were well adapted as media for the growth of micro-organisms, although the possibility of certain forms of natural immunity owing their existence to absence of suitable nutritive pabulum was deserving of consideration in the light of Ehrlich's analogous suggestion of the absence of suitable receptors. Chauveau's retention theory, briefly discussed, was followed by a *résumé* of the zoological observations extending over many years, concerning the means employed by the infected host to resist microbial infection upon which Metchnikoff subsequently founded his phagocytic theory of immunity which might be briefly stated as the destruction of the virus in the interior of certain mesodermic cells by a process of digestion. In the meantime the humoral theory propounded by Buchner, based on the observations that the destruction of bacteria took place in cell-free serum *in vitro*, owing to the action of certain substances which he termed alexins and that the bactericidal properties of the serum could be inhibited by heating to 56° C., found many supporters. The proposition that these alexins were derived from leucocytes led to researches that culminated in the partial fusion of the rival cellular and humoral theories, although the discovery of antitoxins at about this time raised the question of the site and mode of manufacture of anti-bodies. Denys and Havet showed by filtering dog's blood through paper that the serum was less bactericidal for *Bacillus coli* than the blood and concluded that the leucocytes which were held back in the process of filtration were concerned in the formation of alexin, although they stated that cells and serum acted together in a manner varying with the species of animal and the nature of the virus. From this time on much research had been devoted to the question of the origin of the alexin and the question had been complicated by the fact that Buchner's alexin comprised two bodies—a complement (alexin proper) and an immune body. Metchnikoff considered that both these bodies were contained in certain phagocytic cells, the macrophages, and affirmed that plasma was alexin-free and contended that the alexin action was of the nature of a digestive process—a contention entirely negated by the experiments of Grüber and others. Many observations were undertaken with a view to extracting alexin from the leucocytes but without success, although Dr. Bulloch by simultaneously measuring the amount of hæmolytic constituents on the one hand and the mono- and poly-nuclear leucocytes on the other, found that the appearance of the hæmolytic immune body in the serum was coincident with a rise in the number of mononuclear leucocytes, while by producing an artificial polynuclear pseudo-eosinophilia there was a coincident rise in the amount of complement. In the case of immune sera Pfeiffer, Wassermann, and others found that the main factory of anti-bodies was situated in the spleen, bone marrow, and lymph glands. From the mass of conflicting detail Dr. Bulloch concluded that the existence of alexins was undoubted but nothing certain was known of their origin; their existence in plasma was not definitely settled but the balance of opinion was in favour of their occurrence outside the cells; it was improbable that they acted like digestive ferments. Although highly probable, it was not proved that leucocytes secreted alexin, the diversity of opinion and the uncertainty being due to the complexity of the subject and defects in technique. Wright and others had shown that serum, whether normal or immune, was not bactericidal for the staphylococcus, using the term in its strict sense, and Dr. Bulloch had demonstrated the same fact with regard to the *Bacillus pyocyaneus*; and in considering the conflicting claims of serum and cells in this connexion it must be questioned whether immunity was necessarily always antitoxic or bactericidal. The work of Wright and Douglas had shown that in phagocytosis a cardinal role was played by thermolabile substances, termed opsonins, present in the serum which had

nothing in common with Buchner's alexins, and that during the process of active immunisation the opsonic value of the serum was definitely increased. Dr. Bulloch working with Mr. E. E. Aitken had confirmed the observations of Wright and Douglas on opsonic immunity and had found that the amount of opsonins in the serum could not be increased indefinitely as the result of inoculation, although opsonin was somewhat analogous to agglutinin. Further, serum contained a number of opsonins, each specific for given bacteria, and which could be removed in succession by saturation—results in harmony with the pleurimistic doctrines of Ehrlich. Thus in addition to antitoxic and bactericidal immunity, there also existed opsonic immunity—a phenomenon corresponding largely to the phagocytosis of Metchnikoff.

Dr. GEORGES DREYER (Copenhagen) then read a paper by himself and Dr. A. J. JEX-BLAKE (Oxford) on

Agglutinins in Relation to immunity.

The previous work of Nicolle and Joos was briefly reviewed and the generally accepted explanation of this phenomenon was stated as the combination of agglutinable substance contained within the bacteria themselves with agglutinin present in the serum, which combination, however did not take place except in the presence of a salt. The influence of Ehrlich's side-chain theory upon the hypothesis put forward to explain the mode of action of the specific agglutinins was next considered and the work of Eisenberg and Volk referred to. These authors described the agglutinins as being composed of a specific, labile, precipitating group and a more stable combining group; in the same way the bacteria were described as containing a labile agglutinophoric group and a stable haptophoric group; they further explained the formation of agglutinoids, comparable to toxoids, by the influence of heat acids, &c., upon the agglutinins, and stated that these agglutinoids possessed so great an affinity for the bacterial agglutinable substance as to be able to prevent agglutination—in the presence of unchanged agglutinin even—by combining with the bacterial haptophores. Dr. Dreyer and Dr. Jex Blake carried out a series of observations by testing from 22 to 24 hour-old broth cultures of bacillus coli or cultures of similar age, on agar, emulsified in 0.85 per cent. salt solution made up to an arbitrarily chosen standard of opacity, against the agglutinating immune sera of rabbits and goats previously immunised against bacillus coli and other agglutinants. The experiments were carried out by placing 1.5 cubic centimetres of bacterial emulsion or bouillon culture of bacillus coli in each of 24 small test tubes, adding a quantity of agglutinant to each of tubes 1 to 23, gradually diminishing so that tube 1 contained 100 times as much as tube 23 and making the contents of each tube up to 2.5 cubic centimetres. Tube 24, containing only bacteria and salt solution, served as a control. The tubes were well shaken, then heated in a water bath at 37° C. for from one and a half to two hours, then the amount of agglutination was measured, the measurements being repeated after further 18 hours at room temperature when necessary. The measurements were made partly by Madsen's method—i.e., selecting as a standard a moderately agglutinated tube and comparing it with tubes of other series—and partly by determining the tube showing the minimum agglutination visible to the naked eye in each series. The results yielded by the two methods did not always agree and discrepancies were particularly noted in cases where the serum had been first treated by heat or chemical reagents, from which Dr. Dreyer and Dr. Jex-Blake argued that the reaction velocity of the chemical or physical processes resulting in the agglutination of bacteria was a very variable factor. The age of agar cultures had little influence upon the agglutinability of the bacteria, but broth cultures showed

diminished agglutinability with increasing age, due to the presence of toxins which combined with the agglutinin and were precipitated by excess of it. Eisenberg and Volk in investigating compounds formed by bacteria and agglutinins, found that the absolute absorption of agglutinin by a constant quantity of bacteria increased with increasing quantities of agglutinin; while the coefficient of absorption—e.g., the ratio of agglutinin absorbed by bacteria to agglutinin originally present—fell. Dr. Dreyer and Dr. Jex-Blake found, using the filtrate of a 19-day broth culture of *bacillus coli*, that with increasing amounts of agglutinin its absolute absorption by the bacterial products increased, but that the absorption coefficient remained the same. When investigating the action of heat on the agglutinability of bacteria they noted that heating up to 60°C. scarcely altered the agglutinability of *coli* emulsion, but heating to 70°C. and upwards considerably diminished it, the diminution, however being less marked with old cultures, and instanced a 24 hour-old culture requiring 35 times as much agglutinin after heating to 100°C. to produce a similar result as was needed by the unheated culture, but with a 50-day-old heated culture only 3.6 times as much agglutinin was needed as by the unheated emulsion. The suggestion that the heating destroys the agglutinable substance of the bacteria was denied by Dr. Dreyer and Dr. Jex-Blake for their experiment showed that prolonged—from two to 13 hours—heating of the emulsion at 100°C. partially, or even entirely, restored its agglutinability, a phenomenon which they explained by assuming that the agglutinin-fixing body, which was dissolved out into the fluid during the early stages of the heating, was destroyed by prolongation of the heating process. They also suggested that change in bacterial surface tension might be involved. In a similar way Dr. Dreyer's experiments showed that megatheriolysin heated to 60°C. for 30 minutes had no effect on goat's blood but after heating to 100°C. for ten minutes two and a half volumes would produce a similar amount of hæmolysis as one volume of the unheated lysin, whilst the identity of the hæmolytic reaction in the two cases was proved by the inhibition of the phenomena by the addition of antimegatheriolysin. In discussing the influence of heat on agglutinin itself Dr. Dreyer and Dr. Jex-Blake showed that when immune serum was heated for half an hour at 65°C. half the agglutinating power appeared to be lost if the preparations were examined at the end of two hours at 37°C., but when examined after a further period of 18 hours at room temperature the destruction of agglutinin was seen to be *nil*; and, further, that the greater the dilution at which the serum was heated the greater was the apparent destruction of agglutinin, from which they argued that the "zone of inhibition"—i.e., the production of more marked agglutination when the serum was present in small quantities than when present in large quantities—was not a consequence of the conversion of agglutinin into agglutinoid as maintained by Eisenberg and Volk, but that the phenomenon might be explained, partly at any rate, by a slowing of the velocity of the agglutination reaction. The agglutination of *bacillus coli* and *bacillus typhosus* by acids was then briefly described and its peculiarities were noted. The reaction was indistinguishable both naked eye and microscopically from that produced by specific immune sera; emulsions of *bacillus coli* in normal saline or in sterile broth were readily agglutinated by hydrochloric acid—broth cultivations with difficulty. The most characteristic feature of the phenomenon was that it was produced either by relatively large or by relatively small amount of acid but not by the intermediate amounts. The degree of opalescence of the emulsion was also an important factor, the intermediate zone of inhibition diminishing with increasing density of emulsion. The addition of free acid to bacterial emulsion profoundly altered its serum agglutinability—the

presence of 0.06 milligramme of hydrochloric acid reducing it to one-half, or of 0.24 milligramme of acid to one-thirty-third, although each of these quantities of acid acting alone would produce marked agglutination. Caustic alkalies did not agglutinate bacterial emulsions but rendered it less agglutinable. Acting upon immune sera an alkali was more destructive than an acid, though in each case the destruction of agglutinin was less than it appeared, as could be proved by suitable neutralisation.

Dr. THOROLD MADSEN (Copenhagen) then gave his paper on

The Neutralisation of Lysins,

in which he first described and demonstrated Ehrlich's conception of diphtheria toxin as composed of a series of bodies—proto-toxin, dentero-toxin, trito-toxin, and toxin, differing in toxicity and also in avidity for the antitoxin, by graphic methods with the aid of the familiar "spectrum" and "stair-step" curve basing his remarks on the concrete example of the complete neutralisation of 100 toxic units *in vitro* by a quantity of antitoxin to which the numerical value of 100 had been assigned and showing how this theory of the composition of the toxin was supported by the results of partial saturation experiments. Passing on to his own experiments on tetanolysin (the hæmolytic substance of tetano-toxin) it was shown that almost identical phenomena could be demonstrated by similar means but that if the antilysin was added in very small increments to the tetanolysin the neutralisation could be represented by a regular curve showing no trace of the stair steps which indicate the different components of the toxin. Contrasting the results thus obtained with those observed during the neutralisation of a strong base by a strong acid on the one hand and of a weak base by a weak acid on the other the similarity of the hyperbolic curves produced during the neutralisation of tetanolysin by antitetanolysin and of ammonia by boric acid was noted, and it was found that the necessary data could be calculated in a corresponding manner by the use of formulæ deduced from the law of mass action (Guldberg-Waage): the formula for toxin-antitoxin combinations being expressed as
$$\frac{\text{Toxin-antitoxin}}{\text{vol.}} = \frac{\text{Free toxin} \times \text{Free antitoxin}}{\text{vol.}} = K$$

where K is the constant of dissociation, and indicating that one molecule of antitoxin combines with a constant amount of

antitoxin (perhaps one molecule) to form two molecules of one or more combinations of toxin-antitoxin. This application of the established laws of physical chemistry to toxin-antitoxin combinations and their subsequent partial dissociation explained the long zone of neutralisation—the continued addition of antitoxin causing continued diminution but never absolute disappearance of the amount of free toxin. Dr. Madsen then detailed his observations on diphtheria toxin which showed after the perfection of his methods a perfectly satisfactory correspondence between calculated and observed values and yielded regular curves without any indication of the presence of prototoxoid, and the deduction from these observations was that there was no reason to consider the diphtheria toxin as so highly complex a body as Ehrlich described. In this connexion Dr. Madsen commented on the varying values of the dissociation constants, from the small diphtheria constant to the highly dissociated curve of the tetano-lysin constant.

[Dr. Madsen, in association with Walbum, carried out similar observations upon several other bodies—ricin, rennet, vibriolysin, staphylolysin, and streptolysin, and their anti-bodies—and obtained similar curves and similar close agreement between observed and calculated values for the various combinations, while Dr. Madsen together with Dr. Noguchi, obtained identical results with cobra, crotales, and mocassin venom in combination with

their respective antivenins. Dr. Madsen then proceeded to discuss his observations in association with Noguchi and Walbum on the hæmolytic action of acids and alkalies, vibriolysin, steptolysin, oxblood hæmolysiu, the agglutinating power of ricin, and mercuric chloride upon erythrocytes, typhoid and coli agglutiniins, the precipitating action of egg albumin precipitin, &c., with regard to the rates of reaction and the relations to temperature, and showed that the formula $\frac{C_1}{C_2} = E \frac{M}{R} \frac{(T_1 - T_2)}{(T_1 - T_2)}$ held good,

when C_1 and C_2 are the concentrations at the temperatures T_1 and T_2 E , the base for the natural logarithms $\frac{M}{R}$ a constant and T_1 and T_2 the absolute temperatures.

Dr. Madsen concluded his remarks by pointing out the application of the law of monomolecular reactions (cf. sugar inversion) to the attenuation of poisons by heat by means of the formula $\frac{d_x}{d_t} = K (A - x)$, where $A - x$ is the concentration of the toxin at the time t , K is a constant and A the concentration at the beginning of the experiment.

Professor S. H. C. MARTIN (London), next read his paper on

Snake Venom in Relation to Immunity.

Having remarked upon the extreme potency of some snake venoms—0.000025 gramme per kilogramme causing death in the rabbit—the author pointed out that so far all attempts to separate the toxic principle from the modified proteid in which it existed had been unsuccessful and at present the toxic principle must be regarded as a special grouping of a portion of the atoms in the complex venom proteid molecule, although the suggestion was put forward that it might be a side chain and might ultimately be capable of differentiation. Venoms were shown to be highly complex in composition when examined by biological methods, many containing one or more but not all of the following: fibrin ferment; proteolytic ferment; neuro-toxin, with special affinity for the respiration centre; neurotoxin with special affinity for the muscle nerve endings; various cytolytins; anti-bactericidal body; agglutinin for red blood cells, &c., and the rapidly fatal action of some venoms was due to the neutro-toxin causing respiratory paralysis, while others by their fibrin ferment produced intravascular clotting. Years ago Professor Martin expressed a belief in the unity of constituents having similar physiological action although derived from different snakes. More recent observations, however, on the differentiation of these bodies by means of their combining reactions with various antisera led him to the conclusion that although there might be similarity of the toxophoric groups of these various bodies their haptophoric groups were dissimilar. The chief interest of the snake venoms, however, lay in the analogy existing between them and the toxins elaborated by some bacteria and the important part played by experiments on snake venom in the development of our knowledge of immunity. Early experiments in the preparation of therapeutic antiserum led Calmette to maintain that such were not specific but this view had not been supported by the observations of Professor Martin and others and Calmette had recently admitted the existence of neurotoxin and hæmorrhagin, and further that the antitoxic serum obtained as the results of injecting cobra venom was without action on hæmorrhagin, but that employing cobra venom and viper venom a polyvalent serum could

be prepared. Professor Martin was unable to confirm this statement nor was it supported by the observations of Tidswell on the venom of Australian snakes. These observations and those of Lamb, Rogers, and others, showed that the various sera were highly but not absolutely specific and that neutralisation might sometimes be accomplished by means of greatly increased quantities of heterogeneous serum. The advantages of venoms over bacterial toxin in experimental work upon immunity being greater stability when in the dry state and also in solution, the fact that they withstand heating to 70°C. or even boiling without being destroyed and, finally their hæmolytic properties which permitting test-tube experiments, made for greater accuracy and precision. After briefly summarising the work of early observers on the antagonism between toxins and antitoxins, the work of Fraser on cobra venom and antivenene was quoted in support of the hypothesis that this antagonism was of the nature of a chemical reaction. Professor Martin then referred to experiments carried out in association with Cherry in which filtration through a porcelain filter candle choked with gelatin was employed to separate toxin from antitoxin, the larger size of the molecule of antitoxin preventing its passage through the filter, by which it was shown that some chemical relationship between toxin and antitoxin was apparent after the mixture had stood for half an hour because the filtrates obtained from these mixtures were harmless to guinea-pigs, and the great molecular size and complexity of the toxin and antitoxin was held to explain the high velocity coefficient of the reactions involved. Repeating some experiments by Fraser Professor Martin had found that when simultaneously injecting venom and a neutralising dose of its antitoxin subcutaneously in different parts of the body 20 times greater dose of antitoxin was needed than when the venom was introduced subcutaneously, and the antitoxin intravenously, pointing to the probability of the more rapid absorption and fixation by the cells of the toxin.

A further contribution to the study of this branch of immunity was then made by Dr. NOGUCHI who presented the result of his

Therapeutic Experiments with Anti-crotalus and Antimocassin Sera.

After referring to the specificity of anti-sera prepared for the venoms of the crotalus, mocassin, and cobra Dr. Noguchi showed that a given dose of anti-cobra serum protected against five minimal lethal doses of cobra venom, when tested on the guinea-pig, only one of water-mocassin venom, and was quite ineffective against crotalus venom; and, further, that a given quantity of anti-cobra serum neutralised two minimal hæmolytic doses of cobra hæmolysin *in vitro*, but had no anti-hæmolytic action against crotalus or mocassin hæmolysin and so on through the remainder of the cross actions; and, further, that there was no constant relation between antitoxic and anti-hæmolytic values of an antivenene; hence the standardisation of antitoxic power of a serum could be made by simple hæmolytic tests *in vitro*. Turning then to the subject proper of the paper, experiments were quoted to show that two minimal lethal doses of a crotalus venom injected intraperitoneally killed a guinea-pig four to five hours later, and of a mocassin venom three and a half to five hours, the symptoms being similar in each case. Series of guinea-pigs were taken, each injected with two minimal lethal doses of crotalus venom, and at intervals of an hour different animals were treated with various doses of anticrotalus serum. It was then found that it was possible to save the animal even at the most critical stages of intoxication so long as the experimental animal was able to stand. Similar results were obtained with antimocassin serum. The results were well shown in a table, from which the following is taken, and demonstrated conclusively the high therapeutic value of these two antivenenes.

Anti-crotalus serum.		Crotalus venom (2 m.l.d.)	Anti-mocassin serum		Water-mocassin venom. (2 m.l.d.)
Time.	Dose.		Time.	Dose.	
Control.		Death, average time 4 hours 25 minutes.	Control.		Average time— four hours 21 minutes.
1 hour	1 c.c.	Recovered.	1 hour	1 c.c.	Death delayed to ten hours.
2 hours	1 c.c.	Death delayed to six hours.		2 c.c.	Recovered.
	2 c.c.	Recovered.	2 hours	2 c.c.	Death delayed to 3½ hours.
3 hours	1 c.c.	Death delayed to five hours.		4 c.c.	Recovered.
	4 c.c.	Recovered.	3 hours	4 c.c.	Death delayed to four hours.
4 hours	4 c.c.	Death delayed to nine hours.		8 c.c.	Recovered.
	8 c.c.	Recovered.	4 hours	10 c.c.	Recovered.

From the result of his experiments the author concluded that the action of antivenenes was highly, if not strictly, specific both in vivo and in vitro, and that only the specific antivenene must be used in snake poisoning; that the relation between antihæmolytic and antitoxic powers of an antivenene was variable, and that the estimation of one constituent gave no indication of the strength of the other.

Dr. M. A. RUFFER (Alexandria) then gave his paper on

Hæmolytic and Hæmosozic Sera,

detailling experiments carried out in conjunction with Dr. Crendiropoulos on the effects produced on the blood by the injection of urine and bile. The word hæmosozin, it was explained, was coined to obviate the use of the term antihæmolysin, while the term lysogen was employed by the author to denote any substance which when injected into the animal body gave rise to the production of a hæmolytic serum. Fresh urine of man and of animals injected into rabbits stimulated the production, well within a week, of a specific hæmolysin. The lysogen of urine, which could also be demonstrated in some pathological albuminous urines, was unaltered by a temperature of 96°C. for 30 minutes, but was completely inactivated by 120°C. for a similar time; it did not dialyse readily and was destroyed by digestion with mineral acids (5 per cent. hydrochloric acid) and by long contact with alcohol. Lysogen was precipitated by alcohol and by ammonium sulphate and was probably not one of the substances hitherto isolated by chemists from urine. Miss Amos had shown that neither Kreatin, Kreatinin, Urea, Uric acid, xanthin, &c. were lysogenetic. Normal urine also contained a hæmosozin, which was diminished in quantity when the urine was heated to 100°C., and was destroyed by exposure to 120°C., for 30 minutes. The similarity of the reactions of these two substances should not be taken as proof of identity, for lysogen was specific, hæmosozin was not, and would neutralise the hæmolysin of any serum. Experiments carried out with bile showed that the hæmolysis produced in vitro could not be attributed to bile salts only, for after dialysis the salt-free bile was still hæmolytic. On the other hand, the ethereal extract of bile was hæmosozic, and so was normal serum when tested against bile of an animal of the same species.

Hæmosozic sera produced by the injection of bile neutralised completely the hæmolytins present in the serum of animals injected with urine.

The section was then adjourned till 2.45 P.M. On resuming the sitting in the afternoon

Professor ROBERT MUIR (Glasgow) followed with a paper on
Hæmolytic Sera in Relation to Immunity,

in which his remarks were limited to a discussion of three questions. First, the nature of the combination of antisubstances; next, the constitution and mode of action of complements; and lastly, the combining relationships of receptor, immune body, and complement. In considering the saturation phenomena of immune body and red corpuscles its similarity to the process of neutralisation of toxin by antitoxin was remarked, and it was pointed out that the amount of immune body which enters into combination was not a fixed quantity but varied with the amount of immune body present and that the reaction was, in fact, an example of mass action; similarly the combination of complement and anti-complement followed the same physical laws and in both cases the combination was a reversible process. With regard to the second question, the researches of the author confirmed Ehrlich's views, and it might be accepted that complement is analogous to toxin and like it possessed two chief atom groups— a combining or haptophore group and a toxic or zymotoxigenic group; and the opinion was expressed that the combination of complement with red corpuscles treated with immune body was a very firm one and that the saturation phenomena observed might be due in part to the presence of "complementoids" analogous to "toxoids." Further, the author admitted the probability of the multiplicity of complements and agreed with Ehrlich that more than one complement might be present in a given serum. On the other hand, he did not agree that an immune body might have several complementophile groups and might so take up several different complements. The zymotoxigenic group was much more labile than the haptophore group and might be destroyed by heat while the latter persisted, the resulting body being a complementoid which injected into an animal of a different species from that supplying the serum stimulated the production of anticomplement. Intact corpuscles even when treated with immune body were almost impervious to complementoid, but when the toxic action of complement had occurred complementoid readily entered into combination. Turning to the question of variations of toxic activity as contrasted with the combining affinities, experiments were quoted which led to the important conclusion that the therapeutical efficiency of a bactericidal serum depended not only on the ready combination of the complement concerned through the medium of the immune body, but the bacterium would be sensitive to the action of the toxophore group of the complement. Referring to the combining affinities of receptor, immune body, and complement, it was pointed out that Bodet's theory that the immune body rendered the living cell sensitive to the action of complement was insufficient to explain the observed phenomena, although from the fact that neither receptor nor immune body was capable of taking up complement when separate but did so when combined, one of the first two sensitised the other to the combining affinity of complement, still the process was undoubtedly a chemical combination of these three different molecules. The author concluded by referring to some of his experiments which showed that from a combination of receptor and immune body fully saturated with complement (the excess being afterwards removed) immune body could still be dissociated and that it came off as immune body alone—a phenomenon which it was impossible to explain on the supposition that immune body was a link between the receptor and complement molecules.

Dr. A. E. WRIGHT (London) then discussed

Opsonins and their Relation to Immunity.

Prefacing his remarks by a short historical survey of theories of immunity, Dr. Wright deplored the existence of an incurable disease prevalent among scientific workers and characterised by the building up of complete pictures of processes under observation from inadequate facts eked out by vivid imaginations. Passing on to the results of a study of the changes induced in the blood by the inoculation of typhoid vaccine, he referred to the preliminary negative phase characterised by loss of bactericidal power, followed by a positive phase in which bactericidal power was increased, and quoted experiments which clearly showed that after inoculation with small doses the negative phase was slightly and the positive phase well marked, but the reverse was noted after inoculation with large doses. The speaker, in association with Captain S. R. Douglas, I.M.S., had investigated the phenomena grouped under the name of phagocytosis by improved methods which they had devised for the purposes, which, moreover, enabled them to manipulate cells of the blood quite apart from the serum. One of the first results of this work was to show that any alterations in the way of increase of phagocytic power following inoculation with vaccines was due to alternations in the serum not in the cell itself. In particular, one set of experiments quoted brought out the point very clearly. When the phagocytic index was calculated by the methods described, and assuming A to be an individual treated with, say, staphylococcus vaccine, then (1) A's white blood cells three volumes + A's serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 25.7; (2) control white blood cells three volumes + control serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 13; (3) A's white blood cells two volumes + control serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 13; and (4) control white blood cells three volumes + A's serum three volumes + staphylococcus emulsion one volume gave phagocytic index of 28.2. Further experiments showed that these results were due to the presence in A's serum of a substance which by its action on the bacteria rendered them an easy prey to the phagocytes and to this substance the name opsonin had been applied.--*Lancet*, August 6, 1904.

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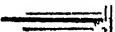
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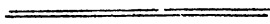
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MUNICIPAL WASTE.

The motto adopted by the Municipality of Calcutta, since the commencement of the elective system, well noticed in their street-hydrants, is Waste Not Want Not. It was meant as a caution to others not to be followed by the officers of the Corporation. There was waste in the former regime before the inauguration of the new Municipal Act. The present legislation has introduced a system of intolerable waste and spoliation almost equal to the actions of Hooleys and Wrights.

The report of the special committee has unearthed pauperising wastes. A few past years were full of wild rumours of the wanton negligence of the officers of the Corporation. It was widely bruited out that there was not only grave mismanagement of the municipal exchequer, but heavy injuries were done by untrustworthy men, who have mostly disappeared from the scene of action. We were reluctant to believe all these rumours. The present report of the select committee forces us to confirm the scandals. New light has been thrown on the irregu-

larity of the municipal administration by the unusual inflation of wealth of some of the municipal officers. The District officers without any methodical supervision create a public injury. The building regulations are followed and violated in the same breath. A wealthy neighbour of easy morality has become a danger to the neighbourhood. A few officers of the Corporation attach an unusual importance to themselves. Incivility, haughtiness, inconsistency, and immeasurable vanity are the characters of many. The modern fad of the Corporation is the decoration of the city at the sacrifice of sanitary arrangements. The town has become the store house of diseases. Since the advent of plague, most of the fevers have changed their clinical features. They have assumed aggravated forms. The open remark is that plethora of wealth has spoiled the energy of the officers of the Corporation. The Health Officer tabulates statistics. His glory is to leave the attack and increase of diseases to fetish worship of a recent type which may be termed "luck." The evident consequence is that in the much vaunted British civilization of India we are acquiring a power for enquiry into the causation of diseases equal to the mystic influence of ancient times. Plague, cholera, fevers of all conceivable descriptions, and bowel complaints are spreading their influence in an aggravated manner. Tuberculosis and cancer are becoming common complaints. Oriental sluggishness of European officers is unequal to curb the power of the several horrible diseases. While Europe and America are successfully combating against them, India is bound to suffer from famine and diseases, whose often recurrence is unknown in former history. The continuous drain of wealth has created a miserable condition in the staying power of the general population. The residual capacity to strive against famine and diseases are gradually vanishing away.

It has been thought fit to saddle Calcutta with two Health Officers, one ordinary and another special. Their marvellous energy is confined to disinfection or neglect. Even disinfection has been found to be a waste of energy, for it is almost always per-

formed in a wrong place. The infected room is generally not shown for disinfection. An out-side room, or a *verandah* is the selected place for the hot contest with microbes. After all, it is observed that disinfection or no attempt to obstruct infection comes to the same thing. With regard to plague, crusade against rats has been thought fit. Notwithstanding the effort of Dr. Simpson to convince scientific men of the danger of infected rats, the fact remains unproved. The Government has raised the same war cry. Rats and mosquitoes are now the only offensive animals. Perhaps, in future, a continuous but futile battle is necessary to exterminate all living beings except man. Municipalities are required to contribute a good sum against them. This is the modern method of *auto-da-fe*. Infact, the burden of two Health Officers is being keenly felt. Without any commensurate advantage, Calcutta is placed under a doubtful supervision which means immense waste. It is almost an axiomatic truth that one energetic Health Officer will be sufficient for undertaking the present responsibilities, when the District offices are created to lessen the work of the Health Officer. A Health Officer and his assistants are enough capable to perform all works of supervision. The real responsibility is placed on the District officers. We strongly object in having two highly paid officers doing insignificant work. A real full-fledged medical man is necessary to undertake the investigation of diseases and to resort means for the prevention of their spread. Tabulation of vital statistics is an easy task, mostly computed by the assistants. Great weight is placed on the spread of plague. Resolutions after resolutions are written with unsatisfactory result. From the period of active interference in Bombay, the authorities have gradually adopted a role of non-intervention. They should have long known that sanitary measures cannot be forced. The principles must be gradually introduced. Such view was adopted by the late Sir Ashley Eden when he was the Lieutenant-Governor of Bengal taking to task the late Dr. Payne for his vigorous policy. The unmeasurable hatred to the first plague regulations was marked everywhere in India. The unexampled

stampede from Calcutta was the effect. From those days the people are suspicious of plague measures. Though steps have been subsequently adopted to pacify them, yet they are not without their fears. The association of Mr. Greer with the municipality from those offended days is an evil which cannot be forgotten by many. The ravages of cholera are not insignificant. Mostly coming from Kalighat, steps should be taken to acquaint the visitors to the shrine of the danger. It is not enough that the consideration of the spread is taken only in the municipal reports. A knowledge of the danger will prevent many to frequent the shrine and to bathe in Tolly's Nala. The queer method of our municipal business is not to ventilate and warn the public but to adopt means to make the dangers secret.

The notification of dangerous diseases is neglected to a degree which makes the health department culpable. Medical practitioners are required to send their information of the occurrence of dangerous diseases as plague, cholera, typhoid fever, small-pox, diphtheria, etc. Their energy is confined to send postcards to the office. A trifling enquiry is made of the occurrence without sufficient result. The District Health Officers are, perhaps, required to inform the Health Officer of any outbreak of dangerous diseases. But what practical steps are taken by the Health Officer cannot be surmised. The use of such information does not come to the public. The last epidemic of urticaria in the town was an extraordinary occurrence. The health department never troubled to prevent the spread of the disease. Several cases happened where the infection was brought by visiting the diseased children. A timely notification of the danger would have averted the spread in many families, who on account of their ignorance incurred serious risks and inconveniences. It should not be supposed that most of the citizens are averse to sanitary precautions. The present need of Bengal in sanitary reformation is the publication and spread of cheap literature containing instructions to females in Bengali with regard to their sanitary necessities. Though the male members know many things yet cannot find time to communicate their ideas.

The increase of highly-paid officers in the Corporation of Calcutta is a waste which wants to be regulated at once. They act as engines of oppression directed by their spies to the little waste of water or any trivial deviation of the municipal law. Their desk-work is not consistent with the proper function of sanitation which should be the chief aim of all municipalities. Many of them are occupied with the decoration of the town. The ostensible fact is that beauty of structure is to be increased at the cost of health. Surely, there is need of more *dhangars*, sweepers and conservancy carts. In their place officers with plethora of pay are supplied to us. We want health and in its stead we get devastating explosives to undermine the municipal exchequer. We require moderately pure air to breathe, but we receive filth and dirt to swallow. We want the required quantity of good water, but in its stead we are threatened with supply of meters. After all, we are placed in an unenviable situation. Can we bless the vain adulators of Greerism? We are fully aware of the difficulty of the Corporation if there be any inordinate waste of water. We have no hesitation in saying that the delinquents should meet with punishment. Our contention is, trivial wastes require warning and the offenders do not deserve to be at once hauled up to the Police Court.

The general feature of all affairs is that the municipal authorities are the dictators of our sanitary requirements. The latest evolution of their work is that they can preach sermons. If you complain of the want of filtered water, you will receive a homily of the waste that you make. When the bad condition of the roads are pointed out, the general evasive reply is that it is not the time for repair. The objectionable feature of the municipal tanks is never noticed. It seems that the citizens of Calcutta are very mischievous persons and the officers of the Corporation are good parsimonious men. They assume a dignified position as if all good actions come from them. They forget that they consciously or unconsciously waste a sum of money compared to which all other misapplications are thrown in the shade. The only authority who can check their vagaries is the Government of Bengal. Even there, our confidences are shaken.

When the late Dr. Mahendra Lal Sircar was in the Bengal Council, a former municipal act of Calcutta was passed notwithstanding the protest of the Indian members. After the meeting a European member of the council conversed with Dr. Sircar on municipal affairs. He did not hesitate to mention that almost all municipalities were managed in a way which allowed half the sum provided in the budget to be squandered for other purpose than the actual work. He being an Irishman knew well how in his country the things were done; and it was so almost every where. If it be a fact, we can only say that our municipality is, perhaps, treading the foot steps of similar institutions of Europe. Our exclamation is "Save us from our Friends." It is a futile effort to be allowed to manage our own institutions. Local self-government is now mostly a myth and fiction. Instead of regeneration, there is evident sign of degeneration and decay.

The evolution of diseases, tracing from the advent of the Portugese traders in India, clearly points out the intrusion of new diseases and the change of type of others for the worse. We have the evidence of Darwin to such introduction. Our *Vava-prakasha* records of similar occurrences. It is sure that the mortality in Calcutta was very high during the times of Robert Clive and Warren Hastings. Instead of Calcutta, it bore the name of Golgotha, the city of skulls. Epidemics of cholera were of a devastating character. Small-pox had its gigantic days. The Europeans on new years' days used to congratulate each other for having their lives spared from the scourges. The improvement effected by the Lottery Committee is worth hundreds of modern Corporations. What we had during the first few years of British administration in Calcutta, before 1857, cannot be compared with the sanitary progress of the present times. The energy and goodness of the Haileybury civilians, are in contrast to the suspicious character of the Competition Wallas. The satisfactory character of the Lottery Committee framed a method of work in the old municipal system which remains unequalled in modern times. The South town improved beyond expectation. The influx of disproportionate wealth from the days of the com-

mitted has made that quarter of the town what it is. The good effect of sanitation has been enhanced by the regular habit of the Europeans. The North town suffered a great disadvantage in these respects. The narrow streets with their accumulation of garbage have overpowered the feeble exertion of the conservancy department and are going from bad to worse. During the period before 1900, the pressure of the filtered water was from 8 to 10 feet. From the days of the present municipal act it has come to 6.50 feet; from 8 to 10 a. m. and from 3 to 5 p. m. The absence of the supply during the noon-time is severely felt. The house-supply has arrived at a ridiculous condition.

There is no ward in the town in which the daily need of two or three additional conservancy carts is not felt. The accumulation of filth is sometimes removed after two or three days. The refuse platforms are insufficient to perform their task. The incinerator at Sealdah is a heavy blunder. That instrument of injury is being again used at a heavy cost. We are told that each platform takes the task of filling up about twenty wagons. The showy incinerator cannot consume more than two or three wagons a day. This ugly affair created by folly threatens to be perpetuated by force. The insufficient consumption of the garbage is thrown out in the forms of squalor, smoke, cinder and dirt on the neighbouring inhabitants. Notwithstanding the innumerable petitions of European and Indian sufferers, the authorities are enacting disgusting tricks. Damage to the tall chimney has cost a few thousands. Then again the explosion of a portion of the boiler will cost another good sum. During the last occurrence we were enveloped in smoke. It adds injury to the insult. The Greer-municipality is a period not only of wanton waste but also of slaughter of the elementary rules of public health. It has created disgust, aversion, and hatred. If the injuries were not detected or brought home to the perpetrators, it is a shabby trick to say that they should not be exposed when detected. Those who say that the abomination of waste should be perpetuated, they incur a responsibility unknown to themselves. Good sense is stifled by the creation of a vanity which is

meant for something which we are not slow to understand. In fact, Calcutta is created the hot bed of pestilence by the lurid lust of sycophancy of a few. The official majority is the show of an obstinate force which is destined to create its own ruin. Shameful exposures are being made, times without number, still the sycophantic cry is, We have Gained. Yes, it is sure they have gained, at a considerable public sacrifice. Rates and taxes raised by bad rules from millions of tax payers are engulfed in the dismal abyss of official mischief, fostered by the glowing panygerics of a few Indians. It is a sickening sight that insults and injuries are heaped on the citizens every day. The *Dustipore* of microbes is being fostered by the everlasting glory of official heat. Epidemics and pestilences are created by the gusts of carelessness scattering those pathogenic bodies in our homes. The obnoxious commissioners who want to hide everything from the public create an immeasurable mischief. They should know that they devour dirt and propagate disease. We are not expected to bless them for obliging us to feed on the microscopic refuse of the garbage.

The way was sufficiently clear to adopt the report of the select committee who recommended a change of the effete constitution. Hide and Seek are not the order of the day. The Eastern Gupta shouldered up by a more Eastern Islam, created a scene of unrivalled delusion. The trans-Gangentic demogorgons were selected for the injurious alteration. The select committee wanted to administer the Corporation a ponderable quantity of the poisonous drug to eradicate the virulent disease. It was not their object to mellify the mixture. That has destroyed more than half the strength of the medicine. The hyper-typhoid state of the municipality necessitated an equivalent remedy to cure the disease. The Gupta-regrets, perhaps, would have naturally followed after its death. We would have given condolence to Mr. Greer or his successor to be forwarded in the proper place. Our thanks are due to Mr. Shirley Tremain and the select committee, as bold and dexterous surgeons of municipal wounds. Their supporters deserve our respects.

SEPTIC TANKS IN BENGAL.

The introduction of the Septic Tank system in the municipalities of Bengal can not but be regarded as injurious when the septic fluids are discharged in any river in which the people are in the habit of bathing. No amount of disinfection can make them innocuous without incurring the contamination of the river and the creation of an additional danger on account of the flow of the fluid ejecta as well as the chemicals which are poisons when taken in the human system. The chances of the imbibition, apart from inhalation, by the bathers are so great that it would be a reckless sanitation if introduced in the riparian areas of the municipalities of Bengal. When it is a settled question that cholera and plague microbes are absorbed by the bathers in a river, it would be an insane method to force the people to take in their organs lacs of pathogenic microbes from the polluted water. When the Health Officer of Calcutta is raising a warning to the bathers in Tolly's Nala, when every possible action is needed to prevent the spread of cholera from the shrine of Kalighat, it is absolute folly to introduce a measure which creates innumerable foci for the dissemination of dangerous diseases. It would not be useless to say that for that reason the sewers of the municipality of Calcutta have been constructed to avoid the danger of an out-flow in the river Hooghly.

It may be said that the habit of the people should change and they should not resort to bathing in rivers. The answer has been so well given by our former rulers that it does not require repetition. As for sanitation, the measures require gradual introduction. They cannot be forced. We simply point out that when the use of mattings in drawing rooms cannot be prevented, for long-standing custom among Europeans, it is not an easy task to introduce sanitary reforms. If the relation of dust and disease be an established fact in sanitary science, we wish the European community would avoid the luxury of a carpet which hides the millions of bacteria in the heaps of dust from view, giving an outward impression of cleanliness. For all that, we say, it is not easy to introduce a sanitary reform, specially among a nation

whose ideas are so much guided by long ages of established religion and custom.

Various objections have been taken against the introduction of septic tanks in Bengal. The following from the "Telegraph," August 25, is one of them :

Our readers are perhaps aware that some of the river-side mills in the suburbs of Calcutta have done away with the services of mehters to cleanse the mill-privies. They have erected some so-called scientific privies in which the night-soil is treated by a scientific process which disintegrates and renders the night-soil innocuous. Objection has however been raised in some quarters to the effect that the night-soil treated in this way is not rendered completely innocuous and that the water of the sacred river Ganges is being polluted by the effluents which are discharged into it. The Hindus do not like the idea of their most sacred river-water being thus deliberately profaned and they therefore raised a strong protest against this sacrilege. The Government have accordingly appointed a Commission who have taken evidence on the point of the injuriousness, &c., of the septic tanks. The following paper setting forth the objections against the installation of septic tanks was prepared by Pandit Satis Chandra Acharjya, Vidyabhusan, M. A., on the 18th instant for answering certain questions about the Septic Tank Installations.

Although the scientific accuracy of some of the points raised leaves room for some remarks the paper on the whole is well worth the attention of the public. The following is the text of the paper.

1. CONSTRUCTION OF THE SEPTIC TANK.

I visited the Gauripur Jute Mill near Naihati on the left bank of the Hughli (Ganges) on Sunday, the 14th August 1904, at 4 P. M. Mr. R. N. Mukherjea, the overseer of the mill, kindly explained to me the construction of the Septic Tank there. The latrine of the mill seems to be excellent. Six gallons of water are automatically let off by each man using the latrine. The discharge of the latrine passes through a syphon into a Macerating Tank which has got port-holes at the height of 3 feet.

The Main Tank which is 7 feet high draws off liquid through these port-holes. At a height of 3 feet from the floor there is in the Tank a perforated pipe which takes a bend and enters into a Trap which contains broken bricks to catch hold of any solid particles that may come along with the liquid discharge. The discharge from the Trap is taken away by a four-inch cast-iron pipe successively to two sets of Filters which are about 300 feet away from the Tank and are filled with broken pieces of porous bricks. The discharge from the Filters is finally let off through a brick-built drain into the *char* land and thence through a *kucha* open drain into the river.

2. CHARACTERS OF THE EFFLUENTS.

Though every thing goes on well in the Septic Tank System, there are however a few points which I venture to mention here for the consideration of the Septic Tank Committee:—

I.—Light and air, which are two great purifiers, being absent, the decomposed excreta in the Main Tank, Macerating Tank and Trap may produce noxious gases and dangerous germs of disease. The effluents may carry those injurious things into the water of the river.

II.—The broken pieces of bricks and porous sands may not trap all the solid particles of the latrine discharge. Some of the solid particles may be carried along with the discharge into the river making thereby its water unfit for drinking and bathing purposes.

III.—The solid particles that are caught hold of by the bricks and sands will gradually be heaped up. How will they be disposed of? Are they not injurious to health?

IV.—The suspended solid particles are said to be disintegrated by some worms produced in the night-soil of the Septic Tank in the course of 24 hours. The discharge in passing through the tank is said to absorb most of the gases due to the disintegration.

Is not the disintegration problematic? The absorption of the gases by the discharge is also a matter of doubt. At any rate the discharge in absorbing the gases must be polluted and ren-

der the water of the river impure and poisonous. What becomes of the worms that eat up the poison and dilute the solid particles?

V.—The latrine discharge that is finally let off into the river seems to be very impure as it is black in colour, the natural colour of water being white.

VI.—There is also an unpleasant smell while the smell of pure water is sweet.

VII.—There seems to exist in the discharge oily substance. What is it?

VIII.—The taste of the discharge is unknown.

IX.—Six gallons of water are mixed with the night-soil and urine in the case of each man using the latrine. Thus the volume of foul matter to be disposed of is enormously increased.

X.—The Septic Tank System of removing sewage is very costly.

3. DISPOSAL OF THE EFFLUENTS.

In my opinion the effluents of the Septic Tank instead of being let off into water should be thrown on land. The land possesses the power of absorbing and assimilating solid particles. There gaseous and other matters of the effluents will also be purified and assimilated by air, rays of the sun, etc. The effluents will thus not only be perfectly disposed of but will also serve to irrigate the land into which they will be let off. Owing to the disintegration or suspension of solid particles the effluents will no doubt lose some of their agricultural value, still they will contain some ingredient which will fertilize the land. If it is found impracticable to let off the effluents into land, they may be connected with the Municipal drains of the locality.

4. MOFUSSIL MUNICIPALITY.

The Septic Tank System is hardly needed in the Municipality at Mofussil where there is plenty of arable land to which the night-soil in its crude state might be applied as manure. The urine also might, in the case of some particular plants and trees be used for agricultural purposes. There should be a large tract

of land under the Mofussil Municipality where the night-soil and urine might be used in agriculture.

5. OBJECTIONS AGAINST LETTING OFF EFFLUENTS INTO WATER.

It is objectionable to let off effluents of the Septic Tank into rivers on religious grounds. In the Vedas (2,000 B. C.—600 B. C.) special sanctity is attached to water. It is looked upon as a god that cleanses us of all our sins. The “Sacred Laws of the Aryas” as contained in the Socio-religious Institutes of Manu, Vishnu and others (600 B. C.—100 A. D.) make direct prohibition against the defilement of water. A river, that has been rendered impure by hard things, is no doubt purified by its current carrying away those things: but a river that has been polluted by liquid discharge cannot be purified by its current. The Purans (300 B. C.—800 A. D.) forbid throwing impure substances into the Ganges.

The Tantras (800 A. D.—1609 A. D.) likewise maintain the sanctity of the Ganges. Modern Hinduism in Bengal which commenced with Raghunandan (about 1600 A. D.) prescribes penitential ceremonies for those who cast filths into the Ganges as is evident from the Prayashchitta Tattva, etc. It is one of the fundamental rules of Buddhistic religion not to pollute water. The Hindu religion, which looks upon water as a god, considers it a sacrilege to let off the effluents into water in general and into the Ganges in particular. The Buddhist religion is also opposed to it.

In performing *Sandhya* (prayer) in the morning, evening and midday we are to pray to water to free us from all sins. In performing *Tarpana* (libation of water) we are to offer water to our dead ancestors. It will certainly be repugnant to our feeling on the sentimental ground, to imagine that the water to which we are praying and the water which we are presenting to our forefathers are mixed with the discharge of latrines.

On sanitary grounds too the effluent should not be let off into water. The black colour, unpleasant smell and the specific weight of the effluent show that it is very much different from pure water and is altogether unsuited for drinking and bathing purposes.

The Hindu religion advocates throwing filthy matters into the earth which alone possesses the power of dissolving every thing.

EDITOR'S NOTES.

Epileptic Leaps.

The following appears in the Illustrated Mail of August 27 :

"Something like a panic was caused in the streets of Lisbon the other day by the extraordinary antics of a young man named Albano, who suffers from a most exceptional form of epilepsy, during which he runs rapidly on all fours like an animal, cries, grunts and barks, and displays almost superhuman agility.

Suddenly seized with a fit in the street, Albano leaped over the heads of the terrified passers-by, rushed into electric cars by the door, and jumped out of the windows. A flight of fifteen wide stone steps was cleared at a flying leap. Finally, he stumbled and appeared to come to his senses.

The unfortunate man is to be sent to a lunatic asylum."

It may be asked whether these bold leaps, the cries, grunts, and barks prove the distant heredity of Albano? The epileptic attacks, perhaps, displayed the suppressed tendencies.

A Royal Clairvoyant.

Those who believe in psychic power will be glad to learn the following, from the Illustrated Mail, August 27 :

"The birth of an heir to the Czar and Czarina was, curiously enough, predicted to the latter a short time after her marriage by the Czar's first cousin, Prince Charles of Denmark, who is looked upon in the Danish Royal Family as something of a clairvoyant. Prince Charles foretold the birth of four daughters, to the infinite chagrin of the Czarina, who was consoled, however, by the prediction that the longed-for heir would follow on the heels of his four little sisters. The Czar himself is a firm believer in spiritual phenomena and occultism, and has often consulted clairvoyants, astrologers, and even gipsy fortune-tellers. Not one of the seers has predicted for him a treacherous or violent death."

The first predictions have proved to be facts. It is a great consolation to the Czar to believe the last, being favoured with the five positive facts.

Voracious Meat-Eaters.

The biggest animal stock yard of the world is the Union Stock Yards, Chicago, U. S. America. They are the largest in the world, occupying an area of 500 acres, and capable of holding at one time 461,000 heads of cattle. There are 21,500 pens, 625 chutes, and 25,000 gates to the yards. As many as eight million hogs, three million sheep and four million cattle pass through the pens in a year.

Jonathan have defeated, almost every where, John Bull in their stock of trade. With Jonathan every thing is prodigious and magnificent. To poor Indians, the above facts sound like the voracious capacity of the ancient Kings of Ceylon depicted in the Ramayana. After all can it not be questioned, will abundant meat-eating lead to our best existence? Can the present stride for militarism be consistent with the consumption of meat to that large extent, undervaluing an equally mixed diet? A sympathetic touch of the East and West will dispel many crude ideas.

Mortality in Plague.

The mortality in plague is again on the increase. The Pioneer of September 2, writes :

"As was the case last August, the deaths from plague are again mounting rapidly. At the end of July the mortality was only some 3,000 weekly, now it exceeds 6,000. In the similar period of last year it was about 7,000, and the Bombay districts were mostly accountable for the deaths, Belgaum and Dharwar being in worst case. This month, also, it is in Bombay that the death-rate is rising, the number of fatal cases for the week ending the 20th instant having nearly 3,600 cases. In Belgaum, Dharwar, and Bijapur districts the disease is making head may, while in the Kathiawar and Kolhapur States plague is once more epidemic. Elsewhere in India there are a good many centres of infection; Mysore, Hyderabad, Bengal, eleven districts in Madras, Central India, Rajputana, and the Central Provinces all showing plague cases. In the United Provinces the deaths are about 50 daily. The Punjab is, for the moment, almost free from the disease, only about 30 fatal cases weekly being reported. Eight deaths were reported in Delhi city last week.'

The broad question is whether the limitation to disinfection recommended by the Royal Commission has proved a success. The recrudescence of the disease could not be checked by disinfection. It is plain that the immediate adoption of other measures have become utmost necessary. A searching enquiry into the causes of fresh outbreaks has been ineffectual. The rat theory of a few faddists does not hold good. In Calcutta, the corroborated testimony is that the huts are the principal seats of the disease. It is so too in other places. The new habitation of the poor is difficult to solve. Their houses should be made of flat roofs to allow utmost ventilation. Overcrowding should be prevented. On the other hand, the poor are unable to pay for such accommodation. The inevitable consequence is that they should be located in places beyond the area of crowded municipalities, and facility should be afforded to their easy travelling in a town at a cheap rate in tramway cars.

Mr. Balfour's Science.

Mr. Balfour has a curious character of making undefinable confusion. His propensity for confusion has put him in the way to acquire that unenviable tactics. He bases all his ideas on his faculty of perception, be that what it may. His first confusion is between phenomena and theories, the last are not absolute facts but conjectures offering the best explanation of those phenomena. The two contrasted views can not be compared by our modern knowledge of light and electricity. The theory of the eighteenth century which did not at first recognise the wave theory of light cannot be compared when the imponderable ether was accepted to produce light. Light is perceivable, but the Hertzian waves of electricity are beyond the faculty of perception. The electrons are composed of ions but they are not bathed in the ether. Electrical and etherial waves can be compared. From the terrestrial microcosm he takes a vault to the nebular macrocosm and sees everything uncertain. Without entering in his stupendous knowledge of physics we see, that to him, and to some of the modern philosophers natural selection is unsatisfactory. The laboratory experience of the philosophers precludes them to take a wide view which is natural in this world. In India, either in famine, disease or politics,

the theory of natural selection stands predominant. The artificial exhaustion is partially recouped by nature. Perhaps, nowhere in the world, the struggle for existence is so keen as in India.

Having read the utterances of Mr. Balfour we can come to the conclusion that Balfouric indecision is the greatest danger of England and India. One thing is certain. His confusion was not confounded by the sudden metamorphosis of the Tibet Mission into the Tibetan war. •

***Funeral of Professor Finsen.**

The funeral of the late Professor Finsen took place on September 29th. The service at the Frederick Church was attended by the King of Denmark and the King of the Hollenes, the Crown Prince of Denmark, the Princes Waldemar, Karl, and Hans, the entire Cabinet, and other high dignitaries, and several hundreds of doctors and students of the Copenhagen medical schools, as well as by many patients who have undergone treatment at the Finsen Light Institute. The German Emperor was represented by Prince Henry of Prussia. Queen Alexandra, the Danish Crown Princess, and the Princesses Victoria, Maud, and Thyra were also present, occupying seats in the transept. The coffin was hidden beneath a mass of beautiful wreaths, among which were tributes from King Edward and Queen Alexandra, and other members of the Royal family, the German Emperor and the German Imperial Chancellor Sir William Goschen, the British Minister in Copenhagen, handed to the widow of Professor Finsen an autograph letter from King Edward expressing His Majesty's condolence with her in her bereavement.—*Brit. Med. Journ.*, Oct. 8, 1904.

The prosecution of unqualified practitioners in New York.

At a recent meeting of the New York County Medical Association, the legal adviser of the association presented a report of the work done during the past three years in investigating and prosecuting illegal practitioners of medicine. Close upon 700 complaints had been investigated, where charges had been made that persons were practising medicine illegally, and 129 (51 women and 78 men) had been prosecuted. In 123 cases the evidence had been obtained

through agents of the association, and in 6 from outside sources. In the 129 cases a conviction had been secured in 123, while in 3 the charge had been dismissed. During the first year average fine had been 45 dollars, during the second year 67 dollars, and during the past year 85 dollars. In eleven instances sentence had been suspended. Referring to midwives, the lawyer said that they really had a "Midwife Protective Association," and that a person occupying a prominent position in that body had privately informed him that the "County Association" had "scared" them "to death." The defence of suits of alleged malpractice brought against members of the association had been very successful. The lawyer said this branch of their work would go on until November, 1904; because of the amalgamation of the two county societies, it would be discontinued, unless arranged for at that time. He thought a continuance of this work by the legal department would in the near future result in a discontinuance of such efforts on the part of the laity.—*Brit. Med. Journ.*, Sept. 10, 1904.

Famine in India.

Scarcity famine, disease and death are the facts of common occurrence in India. The ravaging plague, cholera and malarious fevers have become endemic. Famine has followed them in its attack. There is not only the famine of harvest, but the scarcity of money has made the devastation of famine more terrible than before. This fact was demonstrated in the famines of 1898-1900. Each century is adding its hundred fold miseries.

We read in the *Times of India*, Bombay, of August 26 :—

"No one can desire to speak the ugly word "Famine," or even "Scarcity," until there is the amplest warrant for doing so. But the agricultural position in the Bombay Presidency has now reached such an acute phase that to ignore the grave possibilities of the situation is to imitate the foolishness of the ostrich. Yesterday was Coconut Day, the festival which is usually regarded as closing the rainy season. It occurred when, with the exception of a portion of the Konkan which need not be taken into consideration in this matter, the rainfall throughout Western India is in grave and serious defect."

Further on, "There is sickness every where, in some place epidemics, all signs of the wanting vitality of the people. They are beginning to lose heart, and to lose health. The feelings of the

responsible administrators may be more easily imagined than described. The abermath of the last great famines has been hardly yet completely gathered, and now there seems no small probability of being confronted with another severe scarcity. Verily, the administration of India is becoming a Sisyphean task. The stone now-a-days is not even allowed to be rolled on to the top of the hill before it is hurled down again. Midway, or even less than that, it is caught up and returned to the bottom, to be rolled up again. The lot of the Indian officer used to be administration diversified by famine relief, but now it is coming to be famine relief diversified by administration. The situation is very grave. A few more repetitions of the experience of recent years, and the whole administrative machinery must inevitably break down."

Unusual Interference.

The right of interference of a medical man is so little that such examples are rarely observed. Such a case happened lately in interfering with a post mortem examination. A cooly named Godai Bisal died on the 25th August being evidently struck by a horse box on the "Umfuli" and knocked down into a boat alongside of it receiving fracture of the skull. He was removed to the Sunbhoo Nath Pandit Hospital, where he died. It is a well known fact that death from injury wants postmortem examination by the Police Surgeon. But the over-zealous Resident Surgeon of the hospital Dr. D. N. Hazra made an autopsy, perhaps being ignorant of the common knowledge. Colonel Walsh, the Police Surgeon stated that previous to his examination, he found that the brain had been removed. The fracture of the skull led him to infer that the man had died from the effects of the injuries in the brain. The coroner and his juries could not pronounce any decided verdict.

Major Edwin Harold Browne, Superintendent of the Hospital deposed that the Resident Surgeon had removed the brain after death, to ascertain the cause of death. At the time it was not known that an inquest was to be held. During the life of the patient a trephining operation was performed and he died after two days. According to him it was a successful operation. Dr. D. N. Hazra, the Resident surgeon admitted that he removed the brain. He did not think that an inquest would be held in the case as it was a case of simple accident. He knew the deceased had no relations, as he was brought to the hospital by some ship people, and during his treatment, no relatives came to see him.

The coroner in summing up the evidence said that it was an act of over-zeal on the part of Dr. Hazra in removing the brain. His conduct was, however, unattended with any harmful result in the present case.

The best part of the matter is the smooth white-washing of the whole affair. We could not understand the words of Dr. Hazra when he said that it was a case of simple accident. Evidently he meant simple hurt. The death of the man two days after the injury proved that it was a case of grievous hurt. For this reason, he stepped beyond the limits of the law in making the autopsy without any authority. Dr. Browne may be satisfied that his operation was successful but conscientious medical men will hesitate to side with him. After all, the whole affair was an unusual interference. The coroner and his jurors might have been satisfied, for not arriving at a proper decision, being guided by the statement of Dr. Browne, but the public can not agree with them. They can safely say that ignorance of law is not an excuse.

Robert Ellis Dudgeon, M. D.

With deep regret we record the death of Dr. Dudgeon, the eminent homœopathic practitioner of England in his eighty-fifth year of age. He was born on the 17th March 1820, and died on the 8th September 1904. After a brilliant career of medical practice of about sixty years, he was taken away from us. Though he made his graduation in 1841, homœopathy could not captivate him till 1843. For his scientific knowledge he was respected by all medical men. Even the orthodox school could not but express sorrow for his loss. One of his brilliant inventions, the sphygmograph which bears his name, has immortalised him more than anything else. He was an all-round man in scientific education. We have the opportunity to use his instrument and are perfectly satisfied the faithful character of the pulse tracings.

Dr. Robert Ellis Dudgeon, who died at Carlton Hill, N.W., last month, at the age of 84, was in his way a notable personage, and certainly one of the most distinguished followers of whom the cult of homœopathy has been able to boast during the past half-century. A Licentiate of the Royal College of Surgeons of Edinburgh in 1839, Dr. Dudgeon spent a year or two abroad in Paris and Vienna, and then graduated M. D. at Edinburgh. Not long afterwards he became editor of the *British Journal of Homœopathy*, and occupied the post

for some forty years, at the same time carrying on a considerable practice, and serving upon the staff of the Homœopathic Hospital. He was a man of unusual mental and physical activity, and this not being fully absorbed by his ordinary work, found outlet in very miscellaneous ways. On the physical side, volunteering, swimming, and golf all claimed him as a devotee; while on the mental side, his literary output was large and varied in character. The subject of optics, in particular, had a great attraction for him, and, in addition to several papers dealing with the subject contributed to the *Philosophical Magazine* and other periodicals, he invented a pair of spectacles for use under water. A man of much humour and a very original turn of mind, he was the esteemed friend of a considerable number of persons of distinction, social and literary, and amongst others of Samuel Butler, the author of *Erewhon*. It was probably under his influence that Dudgeon was induced to turn some of his superfluous energy into the writing of a kind of novel, a romance called *Colymbia*, dealing with an imaginary country situated under the sea, and with the ways of its inhabitants. It was not exactly a success, but contains, nevertheless, a great deal of clever writing of a kind typical of the author's peculiar turn of mind. A more useful piece of work, however, and the one which best entitles Dudgeon to a permanent place in the memory of his fellows, was the invention of the sphygmograph which bears his name—one which is, perhaps, the handiest and most generally useful of those which have been brought out. Dr. Dudgeon's activity persisted until a very late period of life; he continued to see a certain number of patients until quite recently, and his latest literary effort was published only four years ago, when its author had almost reached the age of eighty; it is called *The Prolongation of Life*.—*Brit. Med. Journ.*, Oct. 8, 1904.

The Calcutta Campbell Medical School Fracas.

The following has been put up in the Calcutta Campbell Medical School Notice Board:—

Copy of letter No. 10322, dated 25th August from the Inspector-General of Civil Hospitals, Bengal, in reply to the petition from the students of the Campbell Medical School regarding the grievances and on the enquiries held by the Inspector-General of Civil Hospitals, Bungalow, the 16th August 1904.

No. 10322.

From

The Inspector-General of Civil Hospitals, Bengal.

To

The Superintendent of the Campbell Medical School and Hospital,
Calcutta.

SIR,—With reference to the enclosed petition from the students of the Campbell Medical School and my enquiry thereon held on the 16th instant I have the honor to request that you will inform the students as follows :—

After enquiry and consideration of their representations and action I consider that in combining together to leave the School and in petitioning as they did they have been guilty of a serious breach of discipline for which they deserve punishment. I have carefully enquired into and considered the points put forward in their petition and find there are only a few which are based on fact or which are of an important nature. As regards the quarrel with the Durwan I consider that both the students and the Durwan are to blame. The students committed an assault on the Durwan. They broke the rules of the School in plucking flowers and combined against authority. At the same time I am willing to admit that the Durwan exceeded his duty and provoked the attack. I am willing to look on this disturbance as a boyish outbreak although one which led to serious consequences. The Durwan will be controlled for the future and the students similarly must learn to control their words and action.

They complain of certain grievances connected with the grant of leave and scholarships : in these matters the rules have not been so strictly adhered to as is desirable, and this is a defect which I am sure will be remedied in the future.

The complaint that some students have been removed from the school after failure in the qualifying or diploma examination is not accurately stated or in accordance with facts. In future the rules of the school which in some cases appear to have been misunderstood both by the students and yourself must be carried out strictly.

The students should understand that the earnest desire of the Superintendent and myself is to do all that tends to improve their teaching and prospects ; but in return they must abstain from acts of mutiny, such as they have recently committed, otherwise it will be

necessary to remove from the school those who are the instigators and prime-movers.

I have the honor to be,

Sir,

Your most obedient servant,

(Sd.) S. H. BROWNE, M. D., Col., I. M. S.,
Inspector-General of Civil Hospitals, Bengal.

True Copy.

(Sd.) J. H. TULL WALSH, Lt. Col., I. M. S.

Superintendent of the Campbell Medical School and Hospital.

The notice is remarkable for not dealing with the cause of the row. The Indian boys and the native Durwan were the guilty persons, in the letter but they escaped being reprimanded. The real cause of the mischief was the order of the Deputy Superintendent which permitted the Durwan to act up to the extreme foolishness in beating the boys for plucking flowers. Such things are only possible in India. In any other country that kind of treatment would have created serious disturbance. In the Calcutta Medical College row of 1872, Dr. D. B. Smith was censured by a Government resolution. Now not only no mention is made of the Deputy Superintendent but the boys were censured. The Durwan was surely at fault. But he acted under an authority whose questionable right was not taken into consideration.

Theories of Immunity.

The papers contributed to the discussion on immunity in the Section of pathology at the Oxford meeting of the Association, which we publish to-day, are well worthy of careful perusal. The authors are all men who are actively engaged in research on the subject, and are thus in a position to put forward the latest views on the very varied questions involved. These questions are at present concerned largely with the phenomena of artificial immunization, which have been brought to the front by the search for substances which might be utilized in the therapeutics of infectious disease. The problems which have to be faced in order that the known facts and the new facts which are constantly emerging may be explained are very complex, and it must be confessed that there is as yet apparently no possibility of this complexity being in any way diminished. The time has long passed when, even in dealing with those diseases which are associated with the presence of bacteria in the tissues, the pathologist could

explain recovery and immunity by reference to the phagocytic capacities of cells. Even if the narrow view held by some be true, that, in every case, for the death of bacteria, a previous taking of them up by cells is necessary, it is admitted on all hands that such englobing cells act through the elaboration of definite chemical substances. The investigation of these substances and of the similar bodies concerned in immunization against bacterial intoxication forms the great contribution which has been made to the whole subject by the work centring round the theories of Ehrlich. The main results which have up till now been definitely ascertained in this connexion were summarized by the President of the Section in the commencement of his opening address.

Of the facts on which was first based the deduction that the antagonism of such substances as toxin and antitoxin is of a chemical nature none were more important than those derived from the observations of Professor C. J. Martin on snake poisons and their antivenenes, and his restatement of his views in the light of subsequent work is of the highest interest. The chemical nature of the antagonism is now practically accepted on all hands, though the definiteness of the reactions occurring is to some extent impugned by Bordet, who apparently looks on the union of immune body with bacterial cells as sensitizing these, so that an indefinite amount of complementary substance can act towards their solution. Such a view does not fall in with the observations made by Professor Muir, and mentioned in his paper, to the effect that, for each amount of immune body fixed by blood cells, only a definite amount of complement can be subsequently taken up, and further, that, after hæmolysis is complete, the disintegrated molecules of the blood cells can still take up both immune body and complement.

But, putting this aside, controversy at present mostly turns on the nature of the chemical reactions which occur between the bodies developing in the attacked animal on the one hand, and the bacteria or bacterial products on the other. As is well known, Ehrlich holds that the peculiar properties of such a substance as the toxic filtrate from a bouillon culture of the diphtheria bacillus are due to the occurrence of toxic bodies closely allied in composition to one another, but having different affinities for antitoxin and different toxic powers. Dr. Madsen, on the other hand, relying on data obtained by the use of the methods of physical chemistry, while not denying the existence of modified toxins, holds that the characteristic effects, especially that known as the "Ehrlich phenomenon," are due to the most power-

ful of toxins having a comparatively low affinity for antitoxin, and also to the reaction between it and the latter being reversible. In his paper at Oxford he has adduced in support of his views fresh facts derived from investigations of diphtheria toxin, ricin agglutinin and toxin, rennet, vibriolysin, and cobra venom, and his results, showing as they do a very close correspondence between the observed facts and the results derived from mathematical calculation, must have great influence on future discussions of this problem. They may be said completely to confirm their author's earlier comparisons between the tetanolysin-antitetanolysin reaction, and that of ammonia with the weakly acting boric acid. With regard to them it will be interesting, on the one hand, to hear the answer of the Ehrlich school to the statement that, in examining the results of neutralizing in successive experiments a definite quantity of toxin with progressively decreasing fractions of the neutralizing dose of antitoxin, the smaller these fractions are made the greater is the evidence (if Madsen is wrong) of the existence of greater and greater numbers of degenerated toxins. On the other hand, we wait with interest Madsen's detailed reply to the facts brought forward by Sachs and v. Dungern to show that the toxin-antitoxin reaction is not reversible.

It may be found that great differences exist in the combining affinities of bodies belonging to the same class. Professor Muir, for instance, in his Oxford paper, gives the opinion, based on his own work, that what Madsen holds to be true of the toxin-antitoxin combination is also true of the combination of red blood corpuscles with an immune body—to the extent, at least, that both mass action and reversibility are present. His observations, however, on the absence of any evidence of reversibility of the union of complement with the combination of red blood corpuscles and immune body, accentuates the possibility of the existence of variability in combining power, especially when he states that he and Dr. Browning have succeeded in one case in dissociating complement from such a union.

The researches of Dr. Madsen and Professor Muir do not, however, furnish the only examples in this discussion of the way in which physical chemistry is forcing its way to the front in the attack on immunity problems, for Dr. Dreyer, dealing with agglutinins, brought forward evidence that phenomena which had been interpreted as showing the existence of agglutinoids really indicated that in this particular instance the importance of a time reaction had been overlooked. This constant resort to considerations derived from physical

chemistry is one of the most striking features, not only of the papers we are here concerned with but of many others dealing with the problems of immunity. The fact is very significant, for confessedly the present methods of analytical chemistry are impotent to aid in the solution of the problems which those who are engaged in this field of research have to face, and it is thus hopeful for future progress in knowledge that the methods—more difficult, it is true, both in application and in interpretation—of the more advanced physical side of the science are being found to be of service.

While investigations along chemical lines may be said to be the basis of a great part of the work at present being done, pathologists cannot shut their eyes to the fact that, according to our present ideas, the only sources of chemical activity we know of in the body are to be found in cells, and therefore it is most opportune that we should have before us the paper in which Dr. Bulloch, with great ability and critical acumen, has reviewed the existing state of knowledge regarding the part played by cells in manufacturing the chemical products, otherwise so thoroughly investigated. It must be confessed that much still remains to be done before we are in possession of even an outline of this aspect of bodily function. But enough is known, both from direct and indirect evidence, to show that cells which hitherto have been looked on as playing very subordinate parts in the animal economy may be possessed of most active and important functions. In this connexion is to be taken Dr. Wright's contribution to the discussion. His recent differentiation of the parts which may be played by the body fluids on the one hand and the body cells on the other in different infections, and his proof that when phagocytosis occurs previous action of the blood fluids on the bacteria to be ingested is necessary, are of the highest importance, especially as he now announces that he has extended this generalization so as to include infection by the tubercle bacillus. The demonstration of the fact that such an apparently simple occurrence as the taking up of a bacterium by a cell is really made up of different stages, involving, it may be, the co-operation of one cell with another, opens up quite a new field of inquiry, especially when taken along with Dr. Wright's new observation of the existence of differences in the composition of the same fluid in different parts of the body.

Of quite new ideas in relation to immunity, the Oxford discussion, as will have been gathered, furnishes many examples. To two of these special reference may here be made. Among the many

suggestive points in Dr. Dreyer's paper, none is more outstanding or remarkable than his statement with regard to the effects of heat on megatherio-lysin. It is a familiar fact that substances of the toxin class are, as is usually said, "destroyed" by heat. In relation to this phenomenon Dreyer has found that if the lysin named be heated to 100°C . for a short time it loses its lysogenic action, but if the heating be continued this power is restored. It is evident that this remarkable fact will require the most serious attention. The other point is contained in Professor Muir's paper. As is well known, Ehrlich has conceived that in the solution of bacteria and other cells by immune serums the immune body acts as a link between the cell and the complementary substance—it is what he calls an amboceptor. Muir has been led by his results to question this view, and to ask whether the facts might not be explained by merely supposing that by the entry of immune body into a cell the affinity of the latter for complement is increased. The evidence for such a supposition is apparently not yet complete; but it is needless to say that if it be substantiated, the results would be of a far-reaching character, and would go far to modify existing views of the chemical relationships of the substances concerned in immunization against bacterial invasion.—*Brit. Med. Journ.*, September, 10, 1904.

The Dangers of the Indian Religious Festivals.

The annual subsidence in the epidemic of plague has now begun to take place, the returns of plague mortality throughout India, though very serious, being for the time comparatively insignificant. But the yearly religious festivals, which cause an anxious time for the officials intrusted with the sanitary arrangements for these large concourses of people, have now commenced. Our Special Correspondent writes from Calcutta under the date July 16th as follows: "The extension of the railways in India has added to the difficulties. At Puri, for example, the numbers of the people attending the great car festival are increasing every year. In former times the pilgrims tramped by road but now they are conveyed by train in thousands packed like sheep in trucks. The water-supply is often deficient and polluted. Last year over 6000 deaths occurred from cholera and the outbreak in the town spread to the whole district around. The people are so ignorant and so fanatical that they prefer dying during the pilgrimage to availing themselves of medical assistance. Perhaps in the old days as many died on the road to or from Puri as now die in the city itself, but the danger which presents itself to-day consists in the widespread dissemination of the disease. The religious parties themselves have no concern for the health of the pilgrims and all the sanitary arrangements have to be made by the Government."—*The Lancet*, August 6, 1904.

CLINICAL RECORD.

Indian.

A CASE OF SUPPRESSED URTICARIA.

BY DR. HEM CHANDRA RAY CHAUDHURI, L. M. S.

A baby aged about 9 months, living in Serpentine Lane had suddenly an attack of convulsion with high fever on the morning of 4th October. I was asked to see him. The convulsion was attended with froth in the mouth and was of unusual violence. There were little remissions or intervals of attack. In fact, the convulsions almost formed a successive chain of spasms of the extremities and face. *Bell.* 30 centesimal globules were given two at a time, and waited to look at the result. Ten minutes went away without any effect. I left instruction to repeat the medicine every half hour to three doses. After two hours there was a little cessation and no more medicine was given. Again the convulsions began at 12 noon. *Bell.* 30 cent. globules were tried as before but without effect. *Bell.* 6 dec. globules were next given, with no satisfactory result. During this noon-attack there were evident symptoms of the increase of violence, with low moaning sounds, perhaps from colicky pain. *Acco.* 1 dec. globules were placed on the tongue with no effect. I waited an hour without administering any medicine. The convulsions were as violent as before. No change was observed. The whole family were on the tip-toe expecting the extinction of life every moment. Then I placed five globules of *Cicuta* 3 dec. on the tongue. Within five minutes after the administration of the medicine there was evident sign of decrease. After half an hour I repeated another two globules. After an hour the convulsions subsided. A noticeable fact was that just after the administration of *Cicuta*, the child passed a heavy stool and the low moaning sounds ceased altogether. There was another stool after that. I left the place instructing to repeat the globules every two hours up to two doses, and to be given every half hour, if convulsion again takes place.

On the 5th October, I was informed that there no more of the attack. Urticarial eruptions have covered the whole body, with great scratchings. They began to appear from the last part of the night. Fever was attended with it. *Acco.* 3 dec. globules, two at a time, every three hours, to four doses.

6th October. The fever continues, but urticaria has partially subsided. *Acco.* 3 dec. globules were continued. Having observed

no further progress, in the evening Dule. 3 dec. globules were administered, two at a time.

7th October. The fever and eruption have almost altogether disappeared. Dule. 3 dec. globules were continued.

8th October. No more fever or eruption. The child was evidently doing well.

REMARKS.

The intensity of convulsion in this case caused great anxiety. It must be admitted that *Cicuta* produced marvellous effect. Dule. was administered as the fever and the convulsion were the results of a bath. The violence of the convulsion was perhaps due to the suppressed eruption of urticaria and its appearance on the skin gave the child a relief which was so necessary. It may be said that the bath produced a retrocedent effect on the urticarial eruptions, which endangered the life of the child.

Another fact to be observed is that convulsions do take place in many cases without the suppression of eruptions. The intensity of the occurrence points to the fact of suppression. With many children one convulsive attack makes them affected to have the repetition of the disease. The sensory nerves are touched to a degree which makes them unable to shake off the effect of the first attack. This child after a long time had an attack of slight convulsion with fever, which soon subsided without any medicine.

Foreign.

CASES OF CUPRUM ARSENICOSUM.

By DR. A. STIEGELE, STUTTGART.

Translated for the HOMŒOPATHIC RECORDER from the *Allg. Hom. Zeit.*, June 30, 1904.

We are entering the season of summer complaints, and in Stuttgart we have already had to meet several cases of gastroenteritis. In *Cuprum arsenicos*, we have a remedy which will rapidly cure a goodly number of acute diseases of the stomach and intestines. Our literature shows, however, that this remedy may also prove very valuable in chronic cases and should be used thus much more frequently than is done.

Fr. Gisevius recommends the remedy in painful neuroses and in enteroptosis, and has adduced quite a number of very instructive clinical proofs for its indications.

The symptoms which Gisevius enumerates from the *Cyclopaedia* of the Pathogenesis of Drugs are as follows :

I. (a) The tongue is thickly coated, a dirty brown ; there is irritability, constipation, a dull sensation in the head, prostration, lack of appetite.

(b) The tongue is thickly coated ; there is much eructation, restlessness, nervousness ; the tongue is coated white, there is fetor from the mouth, a metallic taste, the tongue is white. Rumbling in the bowels with sharp, cutting pains in the abdomen. Violent pains below the lower corner of the left shoulderblade, worse when moving or breathing ; cannot take a deep breath, tightness in the chest.

II. Debility, cutting pain in the stomach. The urine has a smell as after eating garlic. Nausea with lameness in the back. Pains in the lumbar region and in the anterior muscular part of the thigh. Unusual thirst. Persistent lameness of the back.

III. Poison symptoms :

(a) Violent nausea and vomiting of bile-green water ; she spit out mouthfuls of water ; much thirst and drinking of water ; pain in the bowels : copious abnormal stool, followed by a diminution of the pain.

(b) The gastric region is very sensitive to pressure.

The following cases demonstrated the excellent effects of *Cuprum arsenicosum* also in subacute and chronic cases.

1. A little girl, three months old.

April 18, 1903. The mother stated that the infant had been suffering for ten weeks from intestinal catarrh. Every diaper contains some thin, chopped, green stool ; the patient was very much emaciated.

An examination showed a strongly coated tongue, the abdomen distended meteorically, the little legs were drawn up to the body ; atrophic, anæmic appearance.

Prescription : *Cuprum arsen.* 6 trit., as much as will lie on the tip of a knife, put into the milk, morning and evening.

April 23d. Only three or four stools a day, well digested, of thin pappy consistence, but of yellow color. Continued.

April 25th. There is good progress. The stool now has the consistence of ointment, two or three times a day. No more medicine.

April 29th. The improvement continues, one or two stools a day.

2. An infant boy, four weeks old.

August 12, 1903. For a week the boy has been sick of intestinal catarrh ; the stool is green, thin, coming every time the baby drinks ;

the patient is very much emaciated. *Cuprum arsen.* 6 trit., brought on a permanent cure in two days.

3. E. R. eleven weeks old.

May 30, 1903. He has had catarrh of the bowels for two weeks, and has fallen off much; the stools are watery, yellowish-green. The baby cries very much, and always draws up its legs to its body.

After receiving *Cuprum arsen.* 6, trit. its stool after three days was normal.

4. The following case differs from the preceding ones in having its origin in neurosis.

September 7, 1903. G. U., a merchant, thirty-seven years of age, tells me that he has been suffering for eight weeks. About six to eight times a day there is a diarrhœic stool, now and then of bloody color: there is very little appetite, much thirst, feels very wretched, the physician had told him that it was "nervous" diarrhœa. His treatment so far has been ineffective. Deep mental depression. The anamnesis does not disclose any acceptable cause of this affection. An examination does not disclose anything unusual, though there is a considerable increase of the various reflexions, especially the reflexion of the abdominal integuments.

Prescription: *Cuprum arsen.*, 4 trit., every three hours a dose of the size of a pea.

September 16, 1903. The diarrhœa is considerably diminished, the stools being two to three a day: the appetite and general health much improved; the physical depression also is especially diminished. Continued.

September 26, 1903. The patient feels well. Twice a day there is a thick pappy stools; the appetite is good, he increases in weight, his mood is improved.

5. E. D., a baby girl, nine months of age.

September 1, 1903. Since three months there has been catarrh of the stomach and intestines, allopathic treatment without success. The child vomits every time after drinking his bottle; stools nine to ten times a day, green, chopped, watery, occasionally much mucus mixed with it. The infant looks atrophied. Its color is whitish yellow, the skin on the ears and the mucous membrane is anæmic; since two weeks the mouth is covered with milk-thrush. The babe is indifferent or moans, while its eyes look weary. Little sleep, often it cries all night. The infant received *Cuprum arsenicosum* 5 trit., as much as will lie on the point of a knife

September 2d. The mother tells me with glad surprise that the patient had been much more quiet during the night, and had only vomited once. *Cuprum arsen.*, 5, morning and evening.

September 3, 1903. The diarrhœa diminishes, there is no more vomiting. The infant drinks with appetite, while before it has been averse to all food; during the three months all imaginable infant's foods had been tried. Great masses of mucus are discharged in the stools. Prescription: One dose every three days.

September 19th. "When the powder is discontinued too long diarrhœa and vomiting return." Through the occasional use of *Cuprum arsen.* 5, this case of chronic gastritis was quickly and permanently cured.

In the beginning of winter the little patient was seized with whooping-cough of the most violent degree, but got well in four weeks.

The jerky action of the medicine after the affection had continued for months was very striking. My two allopathic colleagues in M. had some difficulty in explaining it. But they never thought of thoroughly examining the matter, but they satisfied themselves with casting wrathful looks on the mother of the little patient, and not greeting her any more; in this proceeding they were cordially seconded by the druggist. They are zealous adherents of Privy Councillor Spatz and are combatting "for the freedom and impartiality of Science."

Clarke says that also in the provings there is an evidence of the combination of the two metals in *Cuprum arsenicosum*. But neither he nor other lengthy manuals refer to the use of *Cuprum arsenicos.* in subacute or chronic cases. This description of a few cases without much significance in a merely clinical way, seem justified, in order to enlarge our view as to the character of this remedy.—*Homœopathic Recorder*, August 15, 1904.

Gleanings from Contemporary Literature.**AUTOBIOGRAPHY OF DR. R. E. DUDGEON.**

"I was born, as I have been informed, for my memory does not go so far back, in a country house in the outskirts of Edinburgh, on St. Patrick's day, 1820. This, I hope, is the only event in my narrative which I must give on other than my own authority. My medical studies were carried on in the University and the extra-academic Medical School of Edinburgh. I took my surgeon's diploma in 1839, and as I could not obtain my university degree before I had attained my majority, I spent the intervening time chiefly in Paris, where I pursued my studies in the *Ecole de Médecine* and the hospitals, attending the lectures and the clinical practice of Velpeau, Andral, Civiale, Maisonneuve, Louis, Piorry, and others. Returning to Edinburgh in 1841 I passed my final examinations and was duly invested with the magic cap which constituted me "*Medicinæ Doctor*," on the 1st of August of that year. After that I went to Vienna, where I passed a semester and profitted by the instructions of the great medical lights of that city, among whom I may mention Skoda, Rokitansky, Hebra, Heller, and Jäger. I had for fellow-students in Vienna, Drysdale, Russell, and Fisher, all well known in the homœopathic world, and Wilde (afterwards Sir William), who did good service to homœopathy by stating the truth respecting its success in the treatment of cholera in his book on Austria. We were all very sociable, and used to dine together at a favourite restaurant. Almost every day Drysdale, Russell, and Fisher were studying homœopathic treatment at Fleischmann's hospital. At that period I felt no interest in Hahnemann's system. I next spent a few months in Berlin studying eye and ear disease under Jüngken and Kramer, and organic chemistry under Simon. I then went for some months to Dublin, where Graves, Stokes, Corrigan, and Marsh were in full force. I renewed my friendship with my old chum Wilde, and visited his eye and ear practice diligently. Thus equipped with as much medical learning as I could comfortably assimilate, I set up in practice in Liverpool, where my father then resided. Drysdale, who practised there then as now, persuaded me to look into homœopathy. In 1843 the *British Journal of Homœopathy* was started by Drysdale, Russell, and Black, though there were not then a dozen homœopathic practitioners in the United Kingdom. Drysdale gave me many articles to translate from the German for the journal, and I thus learnt a good deal about the new system, and gradually became a thorough believer. By Drysdale's advice I returned to Vienna to see the homœopathic practice of Fleischmann in the famous Gumpendorf Hospital. I now had for fellow-students Madden, Hilbers, and Macleod. Madden and I, with our wives, lived together, and we devoted much of our time to the study of the *Materia Medica*; endeavouring to construct real pictures of disease from the *dissecta membra* of the provings, with but little success as may be imagined. I made the acquaintance of most of the principal homœopathic practitioners of the Kaiserstadt, Wurm, Watzke, Grestel, Zlatarovich, Nehrer, and many others, whom I frequently met at the society and at their social gatherings, and from whom I learnt much. At that time Vienna was in the heyday of its homœopathic fervour, and a vast deal of invaluable work was done in the way of proving new medicines and re-proving old ones. Many useful essays were also published in the periodicals edited by the homœopathic society. A few years later the representatives of homœopathy in Vienna, apparently exhausted by their effort, subsided into a lethargy from which they have not yet been aroused. While their zeal lasted we must allow that they did splendid work.

"On my return to this country I commenced practice in London. That was in 1845. The following year I joined Drysdale and Russell in editing the *British Journal of homœopathy*, then commencing its fourth volume. Black had withdrawn from the editorship after the first volume. I remained editor till the cessation of the journal in 1884. Russell ceased his connection with it in 1858. Atkin joined the editorial staff in 1859, but we lost him in 1861. In 1863 Hughes became an editor, and in 1877 Hughes and I were left alone by the retirement of Drysdale. Clarke came on in 1883 to make us again a triumvirate and to assist at the obsequies of the old journal which expired the following year. During the thirty-eight years of my connection with the *British Journal of Homœopathy* there was, of course, much work to be done, and it is for others to say if that work was well or ill done. I rather think there were some regrets at the final disappearance of this quarterly; at all events, the fact that we were entertained at a grand dinner where all the old editors were presented with magnificent pieces of plate by our colleagues, shows that they were not displeased with the manner in which we had performed our editorial work.

"During the long period, nearly half a century—*sheu fugaces labuntur anni*!—that I have been connected with homœopathy many incidents have occurred, many controversies have arisen, and many victories achieved, in which I have been more or less intimately engaged. It would exhaust your patience and weary your readers were I to give even a brief account of all of them; many of them, indeed, I have now forgotten, though a diligent search in the forty-two volumes of the *British Journal of Homœopathy*—that book of the chronicles of homœopathy—might recall them to mind. I shall only mention the most noteworthy events in which I have been personally implicated.

"A few years after Hahnemann's death, in 1843, the Central Society of German Homœopaths commenced to agitate for the erection of a monument to the founder of homœopathy. Dr. Rummell, as treasurer of the committee appointed by the society for this purpose, appealed to British homœopaths for subscriptions. His appeal was liberally responded to by our countrymen, and sufficient funds having been collected, the committee announced that the monument would take the form of a statue of Hahnemann to be erected in Coethen. To many of us it appeared that Coethen was a most inappropriate locality for the proposed monument, as Hahnemann's connection with that dull little town was purely accidental and transitory. Either Meissen, his birth-place, or Leipzig, where he first publicly taught his doctrines and founded his school, was the proper place for his statue. I wrote in this sense to Dr. Rummell, but he replied that it was too late to make any change, as all arrangements had been completed for the erection of the statue in Coethen. The Congress of the Central Society of 1850 was held in Liegnitz in Silesia. I travelled thither and spoke strongly, in my choicest High Dutch, against the determination of the committee. I was told that no change of locality was now possible; the municipality of Coethen had granted a site, and the Duke of Anhalt-Coethen had promised a liberal contribution, on the understanding that the statue should be erected in his capital. In short, I was snubbed by the committee and the society, and plainly told that it was none of my business to interfere with the society's arrangements. On my return to England I brought the subject before the homœopathic Congress which met that year in Cheltenham, and a unanimous resolution was passed by them condemning Coethen and recommending Meissen or Leipzig as the proper site for the statue. On receiving this influential remonstrance and recommendation, Dr. Rummell wrote to me that the committee

had re-opened the question of the site, and in deference to the wishes of their British colleagues, had determined to erect the statue in Leipzig, provided the extra expense involved in the change should be met by subscriptions in England. I made a second appeal to my colleagues, and soon collected the required funds. This settled the matter. Leipzig was substituted, and the following year (1851) the statue was unveiled amid a large assembly of Hahnemann's disciples from various countries. England was represented on that great occasion by Drysdale, Russell, W. Hering, and myself. It is curious that no allusion was made by any of the speakers to the circumstances which had induced the committee, at the eleventh hour, as it were, to save the statue from sharing its original's exile in the obscure and petty capital of an insignificant principality. *Sic vos non vobis!* Coethen was not in the end deprived of a statue of its whilom guest. Dr. A. Lutz, who set up in practice there after the great reformer's departure erected there a statue of Hahnemann (made of stucco, I believe), at his own expense. Those desirous of seeing this work of art should visit Coethen, if they can discover exactly where it is. I have been there myself, so can certify that there is such a place. But, as Lutz's statue of Hahnemann stands in Lutz's back-garden, perhaps the adventurous visitor might miss seeing it after all.

"Whilst the representatives of homœopathy were in full conclave in their hall, listening to a learned paper by Dr. Clotar Müller, they were alarmed by a loud explosion, quickly followed by a still louder, proceeding from beneath the room. Naturally the first idea was that this was a gunpowder plot devised by some allopathic Guy Fawkes, and intended to blow us all into the air. The actual fact was, however, not so sensational. Beneath our hall was a shop where fireworks were sold. Two boxes of which had successively exploded, without doing any damage beyond alarming us and breaking a few panes of glass. There was in the shop a barrel of gunpowder, which, had it caught fire, would have blown us into smithereens. Had this happened, my memoir would have terminated here in a singularly effective manner amid a grand corrosionation of sky-rockets, squibs, Catherine wheels and Roman candles. I should have ascended to empyrean heights in good company too, for many of the most distinguished disciples of Hahnemann were present in the room, among others Stapf (of *Archiv* fame), Bonninghausen, Rummell, Haubold, Melicher, Schneider, Weber, Rückert, Veit Meyer, Clotar, Müller, Reutsch, Hartlaub, Herschel, Trinks, Wolf, Gross, Bolle, Hofrichter, Caspar, Wahle (of Rome), Pubst (of Copenhagen), and that stately grandee of Spain, the Marquis Nunez, physician to her most Catholic Majesty, Queen Isabella, who, it is said, might still be on the throne had she been contented with her physician's medical advice and refused to listen to his political counsels. F. Hartmann, though in Leipzig, was confined to his arm-chair a helpless cripple, so could not take part in the ceremony. All these champions of homœopathy gave now gone to join the Master in the Elysian Fields, except Drysdale and myself. We stand like two solitary gnarled trunks in a forest were the grim woodman has cut down all our companions, and has paused to sharpen his axe in order to complete his work. No representative of American or French homœopathy was present on this great occasion. Your countrymen had not yet discovered how easy it is to cross the Atlantic from your side, and the French had not yet made up their minds to rush 'à Berlin'—when they might have taken Leipzig by the way.

"I had a considerable share in founding the Hahnemann Hospital and school of Homœopathy in Bloomsbury Square, with which was connected the Hahnemann Medical Society. I need not give the history

of that movement. While it lasted some useful work was done. Courses of lectures were delivered to students at the hospital by Dr. Curie on Therapeutics, by Dr. J. Epps on *Materia Medica*, and by myself on the Theory and Practice of Homœopathy (my lectures were published in one volume in 1854). Dr. Curie having died, the managing committee of the hospital, all laymen, and most of them Curie's personal friends, laid their wise heads together, and finding that the hospital had no debt, resolved to shut it up, and this they did without giving the medical staff the slightest hint of their intention, so that we were amazed and disgusted to find, one day, the shutters up and bills announcing the place to be let. We were naturally indignant at this high-handed action of the committee, as the hospital was doing very good work among the poor of the neighbourhood, and many interesting cases were treated and fine cures made in it. The moral to be drawn from this affair is, if you want your hospital to be a permanent institution, see that you start it with a sufficient endowment or a good thumping debt, then your managing committee cannot close it suddenly at their own sweet will and pleasure. The hospital being gone, the lectures were stopped and the society having no local habitation, languished and died, leaving the British Homœopathic Society and the London Homœopathic Hospital masters of the field, to which we accordingly transferred our allegiance. All are now united in support of these two institutions, which have gradually eliminated from their laws most of what the dissentients objected to.

"In 1852 an agitation commenced among the governing authorities of the medical profession for an Act of Parliament to regulate the affairs of the medical schools and colleges. The movements came to a head in 1858, when the famous Medical Bill was brought before Parliament. As almost all the leading bodies had at different times shown their hostility to homœopathy by passing resolutions against it, or by rejecting candidates for their diplomas who were suspected of leaning towards homœopathy, or who avowed their intention to inquire into the hated system, it was thought desirable to scrutinize carefully the text of the Bill to see if it countenanced this persecution of the members of our school. I procured a copy of the Bill, and found to my consternation that it afforded no protection to candidates for diplomas against their arbitrary rejection by examining bodies on account of their supposed or avowed preference for modes of practice differing from those of their examiners. A case which had recently occurred in Aberdeen showed to what lengths examining boards would go in their crusade against homœopathy. Mr. Harvey had already passed satisfactorily two examinations before the faculty of the Marischal College of that town. But his examiners having a suspicion that he was favourable to homœopathy, before admitting him to his final examination, sent him a letter in the name of the Professor of the Principles and Practice of Medicine, Dr. Macrobine, in which he demanded that Mr. Harvey should make 'a distinct declaration that, as a man of honour, you have not practised and and do not entertain any intention of practising the profession on other principles than those taught and sanctioned in this and other legally recognized schools of medicine.' As Mr. Harvey refused to make any such absurd declaration, he was not permitted to complete his examinations and obtain his degree. The Bill if passed in its actual form would allow any examining body to exact similar declarations from candidates, and homœopathy would thus be practically extinguished in this country. The Bill had by this time already passed the House of Commons and was to be read in a day or two in the House of Lords, when, if no amendment was proposed it would become law and seal the fate of homœopathy. No time was to be lost, so I rushed off to consult with

that old tried friend of homœopathy, Lord Ebury. He fully appreciated the peril of the situation and sent for Mr. William Cowper (Lord Palmerston's step-son, afterwards Lord Mount Temple), who, as an old parliamentary hand and a friend to homœopathy, would be able to advise us in the matter. So we three conspirators sat down and concocted a clause for the Bill, which would, if passed, be an ample protection to candidates for diplomas against such tyranny as that of the Aberdeen College. This clause runs as follows :

'XXIII.—In case it shall appear to the General Council that an Attempt has been made by any Body entitled under the Act to grant Qualifications, to impose upon any Candidates offering himself for Examination an Obligation to adopt or refrain from adopting the Practice of any particular Theory of Medicine or Surgery as a Test or Condition of admitting him to Examination or of granting a Certificate, it shall be lawful for the said Council to represent the same to Her Majesty's most Honourable Privy Council, and the said Privy Council may thereupon issue an Injunction to such Body so acting, directing them to desist from such Practice, and in the event of their not complying therewith, then to order that such Body shall cease to have the Power of conferring any Right to be registered under this Act so long as they shall continue such Practice.'

"Lord Ebury then hurried off to interview the Home Secretary who had charge of the Bill, and get his consent to move the adoption of this new clause in the House of Lords. I asked Lord Lyndhurst, whose family physician I was, to support the clause, if needful, in the House. He readily consented, and promised to go there for the purpose, though he was then nearly ninety years old and sadly crippled by chronic gout. The clause was quickly printed and distributed to the Peers. No opposition was encountered, and the Bill, as amended, passed the House of Lords without any particular notice. The Lord Chancellor did not even read aloud the new clause, as he said noble lords had it printed in their hands, and the whole business did not occupy five minutes. As a new clause had thus been added to the Bill, it had again to pass the ordeal of the House of Commons. This it did a few days later. The reasons for the introduction of the new clause were clearly stated by Mr. Cowper, who was ably supported by some of our staunch friends in the House, particularly Lord Elcho (now Earl of Wemyss) and Mr. Brady. The allopaths were taken completely by surprise when they found that a clause for the protection of the homœopaths had been interpolated into their Bill at the eleventh hour. The great obstetrician, Sir J. Y. Simpson, whose venomous hostility to homœopathy was notorious, had apparently constituted himself the accoucheur of the Bill, and watched it anxiously through all the stages of its incubation and parturition. He sat by my side in the gallery of the House of Lords when the new clause was added there, but had not the faintest suspicion of what was going on down below him. When he read the Act, after it had passed into law, he must have been dreadfully disgusted that it deprived the licensing bodies of the power to reject candidates for degrees and diplomas on account of their homœopathic proclivities, and no doubt he returned to Edinburgh a sadder if a wiser man, to console with his fellow-baronet, Sir Robert Christison, the 'chucker out' to the faculty of candidates suspected of homœopathic leanings, on the loss of his congenial occupation.

"In 1886 the majority of the medical staff of a very old institution, the Infirmary for Consumption, in Margaret Street, London, began to feel uneasy because two of their number had become converts to homœopathy, and treated their patients in the infirmary according to that

method. The introduction of the accursed thing into an institution which had heretofore enjoyed an unsullied reputation for orthodoxy was intolerable to their colleagues on the staff of the infirmary, who made no concealment of their resolve to get rid of the heretics. I was requested by the intended victims to come and help them. As a preliminary I qualified myself for the post of governor of the infirmary by subscribing to its funds. Several futile attempts were made to induce the two homœopaths to resign. They declined to do so. It was then resolved that they should be expelled. This was a serious step, and had to be done at a general meeting; the governors summoned *ad hoc*. Accordingly, at the beginning of 1887, the eventful meeting was convened. Previous to the date of meeting, the allopathic majority circulated a private letter among the governors, declaring that if the obnoxious homœopaths were not dismissed they would all resign. They hoped by this threat to intimidate the governors, who might hesitate about depriving their institution of the services of almost all its medical officers. But 'the best laid schemes o' nice and men gang aft agley,' and the governors no doubt felt that this threat was what is called in pugilistic language 'hitting below the belt.' The opponents of homœopathy moved 'that it having been proved that Drs. Jagielaski and Marsh have treated patients of the Infirmary homœopathically . . . these gentlemen be requested to resign their positions on the staff of the Infirmary.' I proposed, as an amendment, 'that any attempt to limit the liberty of opinion or practice of the medical officers is not sanctioned by the laws of the Infirmary, is prejudicial to the interests of the Infirmary, and is opposed to the spirit of the Medical Act of 1858. After a long and animated discussion, my amendment was carried by a majority of the votes of the governors, and the allopathic majority of medical officers—seven in number—tendered their resignation on the staff of the Infirmary. This did no injury to the Infirmary, as their places were soon filled by the election of an equal number of liberal-minded physicians and surgeons, some homœopathic and some allopathic.

"Proceedings that resulted from the victory of homœopathy led to the famous discussion on the 'Oidium Medicum,' carried on in *The Times* newspaper for about six weeks. It was commenced by Lord Grimthorpe, who occupied the chair at the meeting of the governors of the Infirmary for consumption. Many well-known members of both schools took part in this controversy, to which I contributed my share. It was generally agreed, even by the allopathic periodicals, that the homœopaths scored most points in the logomachic match. We were so satisfied that all throughout we had the best of the argument that we published and widely distributed the whole of the letters in pamphlet form.

"For many years past the medical men of Hahnemann's school had ceased to publish any popular works on homœopathy explaining its doctrines and practice, and it was noticed by many of us that few of the lay public knew what homœopathy was, and were very prone to class it amongst the unscientific quackeries which have always abounded in medicine. We met together to consider how this ignorance could be removed, and the result of our deliberations was that we resolved to form ourselves into a society composed of medical and non-medical adherents of homœopathy, for the purpose of diffusing a correct knowledge of homœopathy among the public by means of popular writings and lectures. We called our association the Homœopathic League. We appointed a committee to transact its business, and since 1887 we have published thirty-six popular tracts, forming three volumes. We have reason to believe that these tracts have been very useful in spreading a correct knowledge of homœopathy among the people. Allied associations have been esta-

blished in France and Spain, and many of the tracts have been translated into Spanish, French, and Italian. Some I observe, have been thought worthy of production in American periodicals. The tracts have also been extensively circulated in India and Australia. I took an active part in the league, which has thrown upon me a good deal of not uncongential work.

"I think I have now given you an account of the principal events of my homœopathic history, but perhaps you may not object to hear of some of the other matters more or less connected with medical science which have occupied my attention during my professional career.

"In working with the microscope I thought it might be of advantage to be able to examine a considerable quantity of fluid at once. In order to do this I encased the object-piece of the microscope in a metal tube closed at the further end by a disc of thin glass. This glass plate must, of course, be well within the focal distance of the object-glass. In this way an ounce or more of urine contained in a glass cell may be examined at a time. All that is required is to insert the object-piece encased in its water-tight tube into the fluid and work it until the proper focus is obtained. The power I chiefly employed for examination of urine is a one-fourth inch objective, and the glass plate at the end of the tube comes to within one-eighth of an inch of the objective. This apparatus can also be used for the examination of the minute organisms contained in other fluids. I described this arrangement of the microscope in the eleventh volume of the *Quarterly Journal of Microscopic Science*.

"In 1870²¹, while making some investigations into the dioptries of vision, in order to ascertain the precise refractive value of the anterior lens of the eye formed by the aqueous humour bounded by the transparent convex cornea, I extinguished this lens by immersing my eye in water. I then found that perfect vision was restored to the immersed eye by a glass lens which had in air a focal distance of three-eighths of an inch. This lens, in the more refractive medium of water I found to possess a focal distance of one and one-half inches, consequently this was the focal distance or refractive value of the anterior lens of the eye. It occurred to me that for subaqueous purposes it would be better to construct my compensating lens of air. But as the refractive power of air is much less than that of water, my air-lens would need to be concave in place of convex. I found that two watch-glasses having a radius of curvature of one inch placed back to back, that is, with their concave surfaces looking outwards, formed, when immersed in water, a lens whose focal distance is one and one-half inches. This, when placed before the immersed eye, restored perfect vision. On this principle I constructed a pair of spectacles which, while restoring perfect vision under water does not interfere with perfect vision in the air. In order to make my air-lens perfect, in place of using watch-glasses, I had the enclosing glasses ground accurately of the exact radius of curvature required. I find these spectacles of great use when diving in clear fresh or salt water, as they enable me to see distinctly all around me. Sir John Herschel, to whom I communicated my invention, wrote me a letter in which he complimented me on its ingenuity. My investigations in the dioptries of vision led me to a new explanation of the mechanism of accommodation differing entirely from that generally received. I do not think my explanation has been adopted by any prominent authorities on the physiology of the eye except Dr. Jacob, of Dublin, the celebrated oculist, who first described the structure in the eye that goes by the name of 'Jacob's membrane.' My desire to gain publicity for my view of the mechanism of accommodation lead to an animated conflict with the committee of the International Ophthalmic Congress of 1872, in which I gained a signal victory over the anti-homœopathic bigots on the com-

mittee who sought to exclude me from the Congress, and prevent me reading a paper on the subject, on the ground that I practised homœopathy. I read my paper, and it is published in the *Transactions* of the Congress. A full account of my views on the mechanism of accommodation and a description of my diving spectacles will be found in a little work I published entitled *The Human Eye: its Optical Construction*.

"I have always been very fond of swimming, and have advocated it as a necessary part of the education of all boys and girls. All who dwell on a little island like ours should know how to swim, for if they happened to tumble off and were unable to swim, it might be awkward for them. In 1873 I made a personal inspection of all the swimming-baths of London, and practically tested them all, except two or three, which were so repulsively dirty I could not muster courage to venture into them. I published the results of my observations, first in the *British Journal of Homœopathy*, and afterwards in a pamphlet. Since then many more swimming-baths have been established in the metropolis, some of which are superior to any I have described in my article.

"In 1879 I got a Pound's sphygmograph, which, though in some respects an improvement on Marey's, was yet far from satisfactory. I believe I could contrive a better instrument, so I set to work to try. A young watch-maker's apprentice from the Black Forest about this time came to London to seek for work. I asked him if he could make a sphygmograph under my direction. He said he thought he could, and after several failures we at last succeeded, and the pocket sphygmograph which bears my name was the result. At first the allopathic authorities, disliking its origin, and yet not liking altogether to condemn what might ultimately prove to be the first favourite, hedged cautiously about it, damping it with faint praise, such as 'a pretty toy, but not to be compared as to accuracy with the instrument of Marey,' and so forth. But now it is generally acknowledged to be the best, and most of the recent writers of text-books on physiology and pathology describe and figure my sphygmograph and no other, and seem quite satisfied that the pulse-tracings it makes are reliable and accurate.

"My contributions to homœopathic literature are too numerous to mention, but perhaps my chief claim to remembrance by the homœopathic world is as the translator of all Hahnemann's homœopathic works (except the *Chronic Diseases*) and of many of his pre-homœopathic works. I have been twice chosen President of the British Homœopathic Society, once of a British Homœopathic Congress, and the crowning honour of my life was my selection as President of the International Homœopathic Congress which met this year at Atlantic City. I much regretted my inability to put in a personal appearance on that great occasion, but I am highly sensible of the honour conferred on me by the choice of my American colleagues. I have twice been chosen to deliver the Hahnemann Oration at our hospital here.

"I have been engaged in almost every controversy on homœopathy in the medical and lay periodicals. I believe I am the first and only avowed partisan of homœopathy who has defended the method of Hahnemann in the London Medical Society.* The occasion was when Dr. Bouth read his paper on 'The Fallacies of Homœopathy,' which he afterwards published in pamphlet form. I was present as a visitor, and after the paper had been read I asked permission to reply. Some opposition was raised to my request, but the president having put it to the vote, the majority decided that I should be heard, and I was listened to with attention, and some of my observations were even slightly applauded. I also took part

* (Dr. Dudgeon was mistaken here. It was at the London Medical Society that the first discussion on Homœopathy took place, in a paper by Mr. Kingdon. For the account of this see M. H. R. vol. xxi p. 604, October 1877.)

in a friendly discussion on homœopathy in a allopathic medical society called, if I remember right, the Guild of St. Luke.

"I have also taken part in discussions in various periodicals on Pas-turism, Kochism, vivisection, and alcohol-drinking, and I have addressed public meetings on two latter kindred delusions.

"I think the above is about all I can tell you respecting my medical career. I fear your readers will be shocked at the length of my egotistical narration, but please take the blame to yourself. *Tu la's voulu, Georges Dardin!* You begged me to write my autobiography, forgetting the proverbial garrulity of old age, so you must abide the natural consequences. An excuse must be made for me, *viz.*, that this is my first attempt to write the history of my life. Should Providence endow me with as many lives as a cat (vine, I believe, is the recognized number), and spare me to write a narrative of each, by the time I reached the sixth or eighth I may have acquired the art of writing autobiography with that brevity which is said to be the soul of wit. Naturally the events of our own life are more interesting to ourselves than to others. Even things which at the time were disagreeable and annoying are often not unpleasant in reminiscence, in accordance with the philosophic reflection of pious *Æneas*: *Hæc olim meminisse juvabit*. They say that wicked French countesses turn devout in their old age for the pleasure it gives them to relate all the pleasant sins of their *beaux jours* in the ear of an indulgent father confessor. So we old men, when we get the chance, love to confide the events of our past life to our patient and much-enduring father confessor 'the courteous reader.'

"At length, however (at what enormous length! your readers will exclaim), I have said all I wish to say respecting my medical career. I will only add, that though in the seventies, I am still hale and hearty. I do my professional work without fatigue, generally manage to play a game of golf once a week, enjoy a week of grouse-shooting over Scotch moors every August, and after that three weeks of the seaside, where, every day after a good long swim in the sea before breakfast, I adjourn to a golf-links and devote all the forenoon to that fascinating game, which I may truthfully say, after the manner of old Verges, 'I play as well as any man of my age who does not play better than I.' Refreshed by this outing I return to work with renewed vigour, and get through the year with tolerable comfort, the dull routine of practice tempered occasionally by a day off in the country among the partridges and pheasants.

Now you have my whole history, and I hope your readers may be edified and not unduly bored by it. This first experience of autobiography has impressed me with the disadvantages under which an autobiographer labours. In writing the memoirs of others' lives, the author is free to distribute his praise or blame, as he thinks fit, to his subject's conduct or sentiments, and indeed every competent biographer is expected to do so. But when he writes his own life, he must studiously refrain from auto-laudation. 'Self-praise,' says the proverb 'is no recommendation.' He might, indeed, imitating the self-depreciation of Saint Paul, admit that he had occasionally acted or spoken 'as a fool,' but few show Dogberry's desire to be 'written down an ass,' even by themselves. The autobiographer is therefore limited to a bare recital of the acts of his life, and must leave the reader to make his own comments and form his own judgment as to the wisdom or folly of his acts. I trust, your readers will be indulgent in their judgment and pronounce a favourable verdict in my case.

I remain, yours very cordially,

R. E. DUDGEON, M.D.

"53, Montague Square, London, England."

PRELIMINARY NOTE ON THE DEVELOPMENT OF TRYPA-
SOMA IN CULTURES OF THE CUNNINGHAM-LEISHMAN
DONOVAN BODIES OF CACHEXIAL FEVER AND
KALA-AZAR.

BY CAPTAIN LEONARD ROGERS, I.M.S., M.D., M.R.C.P. LOND.,
ACTING PROFESSOR OF PATHOLOGY, MEDICAL COLLEGE,
CALCUTTA.

THE Cunningham-Leishman-Donovan bodies found in the spleens and other organs in cases of cachexial fever (previously known as malarial cachexia) present evident characteristics of protozoal parasites, although the exact class to which they belong is still disputed. Recent successful cultivation of another protozoal parasite—namely, the *trypanosoma*—led me to try to get the former organism to live and to multiply outside the body in order to allow of its life-history being more closely studied. For this purpose I placed infected blood obtained from the spleen during life in small tubes with a little citrate of soda solution to prevent the blood clotting and kept it under varying conditions. First, they were incubated at 37°C., but it was found that even when numerous in the original blood they had nearly completely disappeared within 24 hours, only a few lightly staining evidently degenerate forms remaining. It, however, occurred to me that in the case of the *trypanosoma* the organism had been found to live longer outside the body when kept at a lower temperature than it did at blood heat, so I placed some similar culture tubes in an incubator at a temperature of 27°C. I then found that the organisms retained their natural characteristics for several days and in blood films made from the tubes they stained quite as well as in the blood freshly taken from the spleen during life, while not only were they in undiminished numbers but they were actually more numerous than before. At first I thought this might only be an apparent increase as the number of parasites found in two slides made at the same time from fresh blood may vary considerably, but by repeating the observation a number of times I have been able to get conclusive evidence that an increase in the number of the organisms had actually taken place in the culture tubes.

This evidence is of two kinds. First, films were made each day from fluid blood medium and the number of organisms found in many fields in various parts of the specimen was noted, and it was found that even when they were scantily present in the freshly taken blood they could be found in much larger numbers after from one to three days' incubation at from 22° to 27°C., while in some instances in which they had been numerous in the fresh blood, two or three being found in a single field, after one or two days they had become so numerous that from 50 to 100 have been counted in a single field of an oil immersion lens. Secondly, and of still greater value, is the fact that in the films made after incubation forms showing various stages of subdivision were relatively very numerous, while in those specimens which originally showed a large number of the organisms enormous numbers of the smallest forms were found, many of them in clumps of from 10 to 20 or more, several of which were often seen within a single field of an immersion lens. Around these very numerous forms of varying sizes were scattered so thickly as to look at if they had been sprinkled from a pepper-pot, as was remarked by one medical man on seeing them. Now, it is a very marked feature of films made from freshly drawn spleen blood that the proportion of forms undergoing subdivision is extremely small, so that a good deal of search through specimens showing numerous parasites is necessary in order to make out different stages of the subdivision, such as I have already described in a former communica-

tion, and Lieutenant R. S. Christophers, I.M.S., also remarks on the rarity of these forms in ordinary spleen puncture films. Yet in my specimens from the culture tubes it is quite common to see a number of dividing forms in varying stages in a single field of the microscope and I have met with fields showing nearly complete series of these forms. In such specimens it is easy to make out two methods of multiplication of the parasites. In one form the typical oval organism with a large and a small nucleus enlarges to beyond the usual size, then each nucleus divides once, so that two large and two small nuclei are present in a single cell after which the cell itself divides into two, the point of division being at one end so that just before the final separation the other ends alone remain united. A second mode of division, which evidently accounts for the very numerous new small forms of the organisms which are very rarely seen in fresh films, commences very much as I described in my former paper by the nuclei undergoing multiple division until a number of them are seen in a single cell. Next, in the culture a kind of slimy zooglea mass is formed, the outline of the original parasite having disappeared, and the minute multiple nuclei appear to sort themselves out in pairs of a large and a small nucleus which gradually increase in size but have as yet no capsule. When they reach a certain dimension, which is smaller than the usual form found in spleen puncture blood, a capsule appears around each, forming a characteristic group, of complete young parasites such as occurs in fresh spleen blood. It is worthy of note that in these specimens the blood corpuscles have nearly or entirely been dissolved and have therefore disappeared, so it is quite certain that the forms of subdivision just briefly described take place outside the red corpuscles and in no stages have they been observed within them. It is clear, then, that the parasites are not piroplasma.

As I found the organisms died out within a few days at 27°C. I next tried a temperature of 22°C. and soon found that it was more suitable for their growth, as even when very few in the freshly drawn blood they were found in much larger numbers within a day or two. Further, a number of larger forms than I had seen in the fresh blood appeared in the citrated blood at this temperature which led me to look out carefully for flagellated bodies, as the two nuclei of different sizes suggested to me a resemblance to trypanosomes, just as it did to Leishman before. This search was soon rewarded by my finding fully developed trypanosoma in two cases in the cultures. They were best developed in a spleen blood after one day's incubation, although only the usual oval forms were found in the freshly drawn blood and showed many forms undergoing longitudinal splitting, with double flagellæ, macro and micro-nucleus complete, together with pear-shaped flagellated forms exactly similar to those described by Plimmer in trypanosoma of tsetse-fly disease. The other case, fortunately, was one of kala-azar from Assam, for the spleen blood of which taken by puncture I am indebted to my assistant, Assistant-Surgeon G. C. Chatterjee. In cultures of this many intermediate forms and a few complete trypanosoma were found. Thus this new human trypanosoma has been obtained by culture of the bodies found in the spleen by Leishman, so that the latter must be one stage in the life-history of the organism and not degenerated forms as he at first thought them to be. Further, they have already been obtained from both the epidemic form of cachexial fever seen in Lower Bengal and also in the Assam epidemic form known as kala-azar. It is worthy of note that Assistant-Surgeon Chatterjee found a living trypanosome in an anopheles mosquito some time ago, while I am also indebted to him for help in the microscopical examination of my cultures. I hope to be able to publish illustrations of the different stages of the development of the trypanosome at an early date.

Calcutta.

The Lancet, July 23, 1904.

Acknowledgments.

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COMMON DISEASES AND THEIR TREATMENT.

VI.

Iodoform is an often used and abused local remedy among the allopathic practitioners. Any kind of ulcer or wound receives its topical application. The remedy generally produces undesirable effects. The symptoms recorded in its provings are: Bruised soreness in neck; spine sore, does not wish it touched; pain along spine, along the right side of the dorsal vertebrae; sharp pain in the angle of the scapula; pain in arm, leg, tibia and fibula, extending to foot; bruised feeling in arm and leg, as the pain increases the muscles feel irritated; pain in the median nerve; pain in humerus with bruised pain in muscles around the bone; bruised pain in arm, elbow and nerves of hand; pains are worse thinking on them.

Though there are many examples of the local application of *Iodoform* producing inflammation, yet few cases can be cited where the desired effect by its topical use, except in syphilis, has been obtained, and many have been caused by its application.

following case is to the point. A child of about eight years, while fighting with another boy of almost the same age, had his prepuce bitten. An energetic practitioner of the old school gave him a mixture to check the child's fever with the local use of iodoform. Having used the remedies for two days the child was worse. Greenish discoloration in the prepuce was marked. Indeed the advice was that he would call an European Surgeon the next morning for amputation of the penis, otherwise the child may die. I was hurriedly called in the evening. The fever was slight but the greenish colour of the prepuce was enough visible. I changed the dressing and applied only olive oil instead of iodoform. Aco. 1 dec. was given as the internal remedy. The next morning to the utter surprise of the parents, the child seemed to be much better. The greenish discoloration of the prepuce had almost disappeared. Within a week by the help of other medicines he was well.

Iridium is a rare metal that has scarcely been used. It has the power to arrest suppuration of an abscess and reduce inflammation. In comparison to *Hepar* which serves the double purpose either to arrest the suppuration or to enhance that process, *Iridium* helps to hinder the suppurative process. In fact, it seems to be a surer remedy than *Hepar*. *Iridium* has arrested suppuration of axillary abscesses which have greater tendency to collect pus than other similar formations. M. Laboucher, of France, has the curious way to use it in the 4th, Palladium in the 3rd, Platinum in the 3rd, and Osmium in the 1st cent. attenuations. Perhaps the equilibrizing process of dilutions can reduce them to the 12th dec. for use. At any rate, it is necessary to use *Iridium* to arrest suppuration, where the hinderance is productive of good effect.

Lachesis like all other venoms when injected under the skin produces severe inflammation. The general sequel is gangrene. It affects the blood and the muscular tissue. There it has power to produce inflammation. *Crotalus* has greater power over the blood and muscular tissue than *Lachesis*. *Crotalus* acts more on the blood and muscular tissue than on the nervous system. *Lachesis* has more influence on the nervous system than on the blood. Notwithstanding

all these differences, it is a positive fact that *Lachesis* produces swelling, tension, heat and bluish redness. It has the peculiarity to produce bluish redness, shewing that both veins and arteries are affected. *Crotalus* also infects similarly. Among the provings of *Lachesis*, the symptom is red or bluish and painful swelling of feet and legs. Bluish swelling is supposed to be its characteristic.

The following cases are found in Hoyer: "*Poisoned Wounds*." Usually *Arsenicum* is the best remedy, but *Lachesis* often proves curative. Dr. C. Dunham poisoned himself while making an autopsy in 1850. The symptoms, although very serious, were relieved in five days by *Lachesis* 12."

"(Crotalus Poisoning.) Young, healthy man bitten in toe. Leg was swelled; very painful. After eighteen hours the skin ruptured from toe to ankle and was quite black. A strong solution of carbolic acid was applied, and *Lach.* 12 given. Swelling began to abate in thirty minutes, and in three hours the leg down to the ankle had assumed its natural size. Cured in ten days. *Am. Obs.*, February, 1872."

It is a curious fact that notwithstanding the observation that Arsenic is the best remedy in poisoned wounds, which I consider a common fallacy, yet there are a few cases which substantiate its efficacy. The possible conclusion is that either *Crotalus* or *Lachesis* is the best remedy for immediate use in poisoned wounds, the distant effects may require the help of Arsenic.

The general tendency of *Lachesis* is to produce gangrene soon after the inflammation. The effect of *Crotalus* is not so severe, because it generally expends its energy on the connective tissues. Whereas *Lachesis* reserves the power to affect the nervous tissues.

Lachesis has the following symptoms: Hard, hot, tense swelling with tearing pains; tearing or shooting, pulsative and paralytic pains in joints worse by movement; the pains in the joints are the only ones which are worse by movement; bruised pain in the whole body (Arn.); pain changes their location suddenly (Puls.); painful stiffness in back and scapulae; pain in various joints.

Allen writes: "General tendency to rheumatic inflammations, especially of the joints, with soreness of the muscles, without fever. Like Arn. it has marked tendency to ecchymoses and hæmorrhages, especially of bright, red, frothy blood. It has been used as a local application for penetrating wounds and for the stings of insects. As a rule the pains of *Led.* are sticking, tearing and shifting; various parts of the body seemed bruised. Slight injuries cause ecchymoses." The only difference I think is that *Ledum* is applicable to inflammations of particular character as well as to rheumatic swellings.

Clarke has: "Merat and de Lens say *Led.* cures itch and scald-head, which Teste explains by its parasiticide action. This antiparasitic action led Teste to think of *Led.* as a remedy for bites and punctured wounds, especially as certain symptoms of the proving seemed to agree with it. The success which has attended this use of *Led.* in mosquito bites, stings of bees and wasps, rat bites, needle pricks, resulting in whitlows, confirms the observation. 'Redness, swelling, and throbbing in point of index finger, from prick of a needle.' *Led.* aborted a felon in a few days, (W. P. Wesselhoeft.) Teste relates a case of punctured wound: A young lady fell with an embroidery needle in her hand, and the hand was pierced through and through. The wound was serious. There was no hæmorrhage, but Teste noticed the intense cold which accompanies and characterises *Ledum* fever. Within a week *Led.* cured the patient. Yingling records (H. P., X. 400) a parallel case: A. J. M., 38, drove a rusty spike through his left foot near the arch of the instep, glancing to the inside of the foot without passing through the bone. This was at 5 p. m. At 8 p. m., this report was brought to Yingling: A few moments after the accident the patient felt suffering pains in the foot, running up the leg, and rapidly increasing in severity. Great chilliness with chattering of teeth followed. Lower jaw became somewhat stiff; general shivering; feet felt stiff; can't endure it much longer. *Led. 5x.* was sent and rapid improvement took place from the first dose. A solution of *Galena. 5x.* was also applied, an attack of tremors

being evidently aborted." The same experience has been noticed in this country in the treatment of penetrating wounds. The exception is, when the penetrating wounds are not sufficiently poisoned. The intensity of the poison points to *Crotalus* or *Lachesis*.

Hoyne records: "Punctured wounds are well treated with *Ledum*, if the parts are cold to the touch and to the patient.

A boy of eight years fell and ran the point of a pair of scissors into the right parietal bone; healed rapidly under *Arnica extra et intus*; three months later, the boy began to grow thin; was sad; would not eat; at night was restless, and had epileptic fits. *Led.* 12 cured in five days. Dr. M. Godfroid."

Ledum has burning itching of the thighs; stinging itching in various parts of the body; itching worse by scratching; itching and gnawing in the skin, with burning after having scratched; gnawing itching, as if caused by lice.

These indications have given valuable applications in bites of insects and eruptions.

Hempel and Arndt say: "The itching and gnawing of the skin, either partial or general, is somewhat peculiar to the action of *ledum*, and has led to the use of this agent as a specific antidote against the Bites of Insects, mosquito bites, for instance, the distress from which yields readily to the tincture of *ledum* applied externally."

This burning itching has led to its use in prickly heat or lichen tropicus, which is common in India.

Lilium Tigrinum produces subacute inflammation of the muscles of the neck and back. It extends to the spine. There is soreness in the cervical and occipital muscles; pain in the nape with constriction; pain in the regions of scapulae as well as in the space between them; soreness of spine with stiffness, worse in lying; pain in sacrum, worse on standing with pressure downward to hypogastrium; dull pain in sacrum; tension or pulling up, upward from the tip of coccyx; throbbing pulsations as though the blood burst through the veins; pain in all the flesh and bones. The downward dragging from shoulders, thorax, epigastrium

and pelvis finds a compensation in the upward pulling from the tip of the coccyx. Burning palms and soles are the accompaniments.

Clinically, a relation has been established between the pain in the scapulae and the peculiar kind of pain in the heart. The following is from Clarke: "Berridge cured a lady, 50, of heart pain as if grasped with hand, with cold feeling from apex of heart to under left scapula; excited by worry; worse by lying on right side; better by lying on left side and when busy at work."

Magnesia Carb. has been used in various forms. The natural product is the mineral which has not been administered in any other shape except mineral waters. The chemical *Magnesia carb.* is not the identical substance with the mineral. They may be similar drugs but they are not identical. As there is difference between *Hepar sulph.* and *Calcium sulphide*, so there is a distinction between *Magnesite* and *Magnesia carb.* Clarke in his Dictionary of Practical Materia Medica quotes Cooper evidently with the belief that the chemical *Magnesia carb.* has the same action with *Magnesite* contained in some of the mineral waters. Cooper says: "Water containing *Magnesia* and that coming from magnesian lime stone districts is peculiarly soft to the feel. There is reason for supposing that this softness has a soothing effect upon the nervous system when used in the form of baths—e. g., Buxton and Matlok in England Schlungenbad, Wildbad, Rehme, and it may be Gastein in Germany. It is often found that the physical characteristics of substances correspond with their dynamic influences, and thus with *Magnesia*; it very frequently is required for nervous systems that demand a permanently soothing and sustaining influence. Its effects on the skin are reflected upon the primæ viæ or vice versa; for, on the mucous surfaces, quite apart from its antacid action, it proves soothing and sustaining." Our medicinal preparations are derived from pure carbonate of Magnesium. The statement of Cooper leads us to infer that *Magnesia carb.* may be useful in irritation and inflammation of

mucous surfaces. It produces those kinds of pathological changes which are observed in diarrhoea and vomiting of pregnancy. The mucous changes of stomach and intestines are associated with the sour odor of the discharges like Calcareo and Rheum. Even the sweat is sour. It also produces inflammation and ulceration of the mucous membrane of the uterus evidenced in leucorrhoea. The leucorrhoeal discharge is white and acrid preceded by colic, recurring especially after menstruation, as in Alumina.

At present we are not interested in the inflammation of the mucous surfaces. Other inflammations occurring in connective tissues are our search. There we have the following symptoms: Twitching in vessels of thighs, shoulder and face; pains here and there in all parts; jerking pains on rising from bed; easily sprained on bending arm backward; shoulder pains as if dislocated and on touch feels bruised, and inability to turn head to left without pain; soreness of whole body; sensitiveness of skin of head and body, especially to cold, cold creeping through skin and chilliness through and through from every draught; internal restlessness with distraction of mind and trembling of hands; *weakness greater in morning after a good night's sleep than in evening on lying down*; painful sensitiveness of whole body; drawing and tearing in limbs; the symptoms manifest themselves, or are worse at night, and during repose; soreness of the extremities on turning from side to side.

Clarke writes: "One leading note of *Mag. c.* is sensitiveness, mental and bodily, sensitive to touch, sensitive to cold air. Effects of shocks, blows, or mental distress. The least touch causes starting." The inference is that chronic inflammation from either shocks, sprains or blows leading to the hyperæsthetic condition of the nervous system may be within the sphere of Magnesia carb. The fact is that it is indicated in inflammations with exhaustion and the diseases are more nervous than inflammatory. Sensitiveness to cold winds and cold weather speak out that exhausted nervous condition which has made the sufferer so much hyperæsthetic or nervous. Clarke's cure of a tumour

of the right malar bone, administered on the ground of sensitiveness to cold winds and cold weather is a clinical verification to the point. A tumour may be said to be a hypertrophy of tissues due to chronic inflammation.

Magnesia mur. has more decided action on the nervous system than *Magnesia carb.* In other respects it is like the other medicine. It has bruised pain in whole body, worse at night; burning tension here and there; intolerance of fresh air; *uneasiness in bed as she closes eyes*; weakness in morning, with bruised sensation as from insufficient sleep; bruised pain in all limbs; badly weakness which sometimes appears to proceed from stomach; sensation of uneasiness (soreness), and of painful weariness, in whole body, with acute sensibility to least noise; sensation as of boiling water on side on which one rests; the majority of symptoms present themselves when the patient is seated, or at night, and are generally better by movement; pain in long bones when walking; hips sensitive to touch; throbbing in hip; bruised pain in heel. Though both of them produce symptoms of intolerance to cold winds and cold weather, yet that differ in some essential points. *Mag. carb.* has weakness greater in morning after a good night's sleep than in evening on lying down; *Mag. mur.* has uneasiness in bed as soon as she closes eyes. With *Mag. carb.* hair falls profusely. *Mag. mur.* has no such thing. Another similarity with both of them is, symptoms which occur when sitting are usually better by walking. (Puls). In *Mag. carb.* there is amelioration in open air (Alum., Puls). *Mag. mur.* has also amelioration in open air, but the pains in the chest are not relieved.

Neither *Mag. carb.*, nor *Mag. mur.* can produce that kind of inflammation or inflammatory fever from cold wind, which characterizes *Acc. Bell.* or *Mere.* The magnesia salts have the power to prevent the tenderness which causes a person susceptible to cold. They are anti-nervous than anti-inflammatory. Chronic inflammation which requires the help of *Mag. carb.* is also amenable to the influence of *Mag. mur.*

Magnesia sulph. has bruised sensation; a peculiar stork feeling

like exhaustion and prostration, with dry warmth of skin and drawing pains. It shows an affinity with the other salts of magnesia with the difference that it does not produce sensitiveness to cold winds and cold weather. On the contrary, the toothache is worse on coming into a room out of cold air.

Magnolia grandiflora takes rank among anti-inflammatory medicines. Its symptoms are: contusive pains in all parts; heaviness as from want of sleep; weakness; stiffness from slightest exposure to draught of damp air; stiffness better from dry weather; pricking in whole body; soreness worse by exercise; aversion to motion, to going out; pain in heart and apprehension; muscular contractions simulating symptoms of rheumatism, due to damp air; repugnance to all occupation; confusion and dulness.

Allen's clinical experience is "Pains of various kinds in different parts, worse in joints constantly changing places." The significant feature of the medicine is that it creates stiffness of muscles from exposure to cold, damp weather. The soreness is worse by exercise and even walking, creating a repugnance to all occupation. Perhaps, the symptoms are aggravated after bath or exposure to rain. It also produces fever. In these facts it closely resembles Aco., Dule., Rhus tox., etc.

The points of difference with these drugs can only be established after sufficient clinical experience. The suggestions that can help the selection of this medicine are that it does not produce that high fever which distinguishes it from Aco. There is apprehension but it does not go so far as in Aco. The main distinctive character from almost all the similar medicines is stiffness with or without confusion. This stiffness creates disability to undertake all occupation. Another experience of Allen is "Shooting in all limbs; shooting from thighs to feet." The shooting pain points out not only the muscular affection but also the fact of the nerves being touched. This kind of shooting is absent among its allies. In fact, it can be said that it presents a different picture from the medicines which have the same resemblance with it. Its therapeutical use may be confined at

first to inflammations due to cold and damp weather producing a muscular stiffness which may have shooting pains or not.

Malandrinum cannot be passed over without a notice. It is a nosode of the disease in horses called "Grease." The Grease is a swelling and inflammation of the legs of a horse, attended with the secretion of oily matter and cracks in the skin. It infects the udders of cows coming in contact with the grass which has already been infected by horses having that disease. It is a fact to notice that it greatly differs from another disease of horses which is known as Hippozaeninum, Mallein, Glanderin, or Farcin, and which has also supplied us with a valuable nosode. So Malandrin and Mallein are two essentially different diseases of horses. We take the trouble to impress the difference as the similarity of names may bring a confusion. According to Clarke Malandrin is "a very effectual protection against infection with small-pox and against vaccination." It is not so with Hippozaeninum. The nosode is mostly successful in reducing swellings and enlarged glands or healing ulceration derived from toxic influence. Malandrin produces sore pains in limbs and joints; pain along back, as if beaten; pain especially in tibia with petechiæ like patches on the anterior aspect of leg from knee to ankle; petechiæ on both thighs; and knock-knee. These symptoms have great resemblance with eruptive fevers, specially small-pox, measles and typhoid. The enquiry is, can they not indicate other kinds of inflammations derived from poisonous sources without signifying its relationship to the eruptive fevers already mentioned? Any kind of severe derangement of the body in general, producing that kind of sore-pain, may have the scope of the drug for use. It may be observed in a severe attack of influenza, plague, or any other high fever. The severe premonitory symptoms of these diseases require its administration. So also, any local inflammation producing the sore pain in the part as well as in the whole body, supposed to be derived from poisonous effect is under the sphere of its influence.

Manganum is another drug which has been introduced by Hahnemann without a due regard to the difference of its two salts,

acetate and carbonate. Like Iron, the uses of Manganum require separate classification as to its physiological and therapeutic results, into acetate and carbonate. When chemically considered they are so far different from each other that it is evidently a mistake to use acetate instead of carbonate or *vice-versa*. It cannot be sufficiently urged that above all things we require these rectifications in our materia medica, in the light of modern provings. However chaotic the mixture may be, we will try to suggest our requirements. The symptoms presented by Manganum are: Drawing, jerking, tearing in various parts; burrowing in bones nightly; pain on touch; as if suppurating in all parts by touch, with heat of chest and cheeks; drawing tensive pains in several parts, as from a tight band; tension in various parts or cramp-like drawing and tearing; swollen feeling in head, hands and feet, after walking in open air; inclination to stretch all body; bubbling in various muscles, with waving sensation; weakness; the bones are very sensitive; red spots on skin which are elevated, owing to the affections of the bones; ankles are particularly affected; drawing sensation of muscles; pulling and tearing pains, especially in limbs; drawing and tension in limbs and joints, as from contraction of tendons, especially when extending limbs; arthritic pains in joints (and periosteum), with shooting, jerking and digging, worse in evening, and after semi-lateral or cross-ways; inflammatory swellings and suppurations; inflammations of bones, with searching and insupportable pains at night; aggravation at night and from change of weather. With so many inflammatory symptoms, Manganum has not been generally used. There are muscular pains but the soreness in bones is mostly prominent. Clarke has used it in sensitiveness of bones, bad ulcers and inflammation of bones and joints.

The question that can be raised is, in what sort of inflammation Manganum should be used? The answer is, where a deep seated inflammation has attacked muscles and probably may go deeper down to influence the periosteum and bone, there we can derive benefit by the administration of the medicine. In all inflammatory swellings and deep-seated tensions carbonate is preferable to acetate.

In *Manganum Oxydatum Nativum* burning and pressing pains predominate. Boring in bones is its another feature. There is not much sensitiveness to cold air as in carbonate or acetate. Its uses in inflammations may be where burning and pressing in muscles are present. Boring in bones also requires its administration.

Mercurialis perennis produces persistent pains in muscles on motion. The symptoms are clear indications for its use.

PLAGUE RESOLUTION.

The Government of Bengal has thought fit to change the old plague regulations. They embody in one regulation the actions to be taken in Calcutta, other urban towns and rural places. The effort of contending with plague is to be maintained in five classes of operations.

I. *Preventive action* includes (a) *General Sanitation*. It insists on paying heed to conservancy arrangements. "The people should be encouraged to keep the interiors of their houses and compounds scrupulously clean, the refuse being removed by the conservancy staff as promptly and regularly as possible." The plague resolution is issued on the 16th November. We expect to see the zeal of the Calcutta Municipality on their work. Even the Chairman of the Corporation does not doubt of the inefficiency of the conservancy department. Yet it is a curious fact that no improvement has been made with regard to it within a decade. The people are advised to have proper access of light and air in their houses. We are sure the regulations regarding them will be seriously enforced. In towns (including Calcutta) and villages, specially selected officers will be deputed to visit the infected localities. It remains to guess who these selected officers will be. It is not disclosed whether these officers will be medical or lay officials. If they happen to be men of medicine employed in municipal works, then other credentials will not be necessary.

(b) *Destruction of Rats and Mice*. We are not convinced that rats and mice spread plague. They may be themselves affected, but sufficient knowledge is wanting to connect the two occurrences. The Government resolution, suggests the use of "Rough on Rats" as an effective poison to destroy them. Perhaps, it is already known to the Government that the specified poison has killed persons who have taken it inadvertently. The suggestion to use the poison is indirectly defrauding the scope of Poisons Act just introduced by the Government of India. It may be said that the poison is an

effective material for suicidal and homicidal purposes. The indiscriminate use of it is not advisable.

(c) *Inoculation.* The little we speak on Haffkine's or any other inoculation against plague is good. Being an unbeliever of the statistics that are so widely circulated, we have doubts about the technique of the method. The question of natural and acquired immunity is a contested ground of the scientific scholars of biology. Neither the phagocytic power of the leucocytes nor Ehrlich's side-chain theory is believed in their entirety. The bacilli or toxins are enveloped by cells, probably by leucocytes and other cells. They secrete a kind of poison which destroy the bacilli and toxins. Further any kind of acquired immunity is not always protective. Cases have been observed where sudden death has occurred from other causes irrespective of the immunisation. These facts lead us to many considerations which do not impart favourable light to acquired immunities. Professor Muir holds a different view to that of Ehrlich and others. "As is well known, Ehrlich has conceived that in the solution of bacteria and other cells by immune serums the immune body acts as a link called an amboceptor. Muir has been led by his results to question this view, and to ask whether the facts might not be explained by merely supposing that by the entry of immune body into a cell the affinity of the latter for complement is increased." Ehrlich thinks that his toxic filtrate holds "toxic bodies closely allied in composition to one another, but having different affinities for antitoxin and different toxic powers." Dr. Madsen believes from his experiments that the most powerful of toxins have "a comparatively low affinity for antitoxin and also to the reaction between it and the latter being reversible." There are many conflicting opinions as to the neutralising power of toxin by antitoxin.

II. *Enlisting and organizing unofficial help.* The resolution instructs to form Ward Committees. In the case of Calcutta, are Ward Committees to be formed? May we ask, what about the Vigilance Committees. They were formed by a municipal resolution by the Commissioners of Calcutta.

Their function seems to have ceased by the present method of work, which is confined to disinfection. The presidents and secretaries, whose names have been officially published by the late Chairman, Mr. Bright, had not been absolved from their work. It is true they do not work, but their services have not legally been dispensed with. We think, unless they are released from their work, it will be a confusion to create other committees. Either they should be newly empowered for a fresh performance of duty or their work should cease by a resolution of the Commissioners of Calcutta. The Commissioners will then be justified in their fresh formation of a Committee.

The duties to be performed by them are :

“ (1) to call attention to sanitary defects and particularly as to surface filths ;

(2) to make arrangements for obtaining the earliest intelligence of any case of plague ;

(3) to give information to the Health Officer of the town of the occurrence of plague cases ;

(4) to enlist voluntary agency to supplement police measures for the protection of property left in evacuated houses ;

(5) to give advice and assistance as regards the distribution of charitable funds ; and

(6) generally to help and give confidence to the people.”

The committees should consist of official and non-official gentlemen. Private medical practitioners are to be included among them. Perhaps their work will be under the direct management of the Chairman of the Corporation as far as Calcutta is concerned. It is not mentioned whether the Chairman will be permitted to transfer his power to other persons, as the Special Health Officer of the town, etc. We presume that such transference of power will take place, whether the Chairman is authorised or not. It would have been clear to have mentioned the persons to whom such powers can be transferred.

A good augury is that medical practitioners are to be included in the work of sanitary supervision.

III. *Preliminary arrangements in anticipation of an outbreak of plague.* The provision for those evacuating their houses is good, but such cases are rare. The general nature of plague is that it rarely attacks more than one person in the same house. If cleanliness be observed somewhat rigorously, hope may be entertained that the spread may be infinitely less. Common precautions as washing the hands and mouth with great care before taking any food or drink, cutting the nails close to the finger ends, using clean clothes, and scrupulously washing the clothes which are to be used (if they are at all used), can make us little liable to the attacks of bubonic and septicaemic plagues. As for the pneumonic variety, every possible care should be taken not to enter the room of the person so affected. The necessary attendants should be careful not to be on the front of the expired air of the diseased person. It may be said that the pneumonic variety is generally rare.

The necessity of temporary huts for segregation may be convenient in those places where the epidemic is of a virulent form. We think it would be better to transfer the houseless and friendless in towns and to locate them in masonry buildings having sufficient ventilation with large doors and windows.

IV. *Measures to be adopted on the outbreak of plague.* They are disinfection, destruction of infected materials, evacuation of dwellings and removal to plague hospitals.

(a) *Disinfection.* The Government resolution distinctly points out the failure of disinfection by perchloride of mercury. The burning of cowdung cakes, straw, and other materials on the floor of the infected house is recommended. The Dessicating apparatus to be used remains to be specified. We think that common iron oven which can be removed from one place to another will be useful. As far as our experience goes, we know that they are used in Calcutta in houses infected from any dangerous diseases. These ovens can be suitably used by coal and charcoal.

Phenyl or carbolic acid can be used but their strong smell is unpleasant for habitation. They can be used in compounds or

open places. In rooms, heated lime which has been placed on fire on a pan, will serve the purpose well. It should be rubbed on the floor and wall by a piece of thick cloth.

(b) *Destruction of infected material.* The resolution requires that infected clothing and bedding should be burnt; and this practice should be encouraged by offering compensation. The infected grains are to be exposed to the heat of the sun. But the Lieutenant-Governor has shown his kindness in not making it a compulsory measure.

(c) *Evacuation of dwellings.* This extreme measure is recommended in epidemic spreads. The people are advised to dismantle the roofs of their dwellings. Perhaps it is required in case of huts and not masonry buildings. With the last, it may be said that enlarging the doors and windows of those having narrow dimensions will serve the purpose. The creation of temporary huts within an infected village is not safe. We would recommend the houseless people to be transferred to the houses of their relatives, after a careful examination of them so that they may not spread the disease elsewhere. The sick should be removed in a hospital of temporary structure. We hope that free railway tickets would be given to the evicted persons to reach their destination with a little allowance to maintain themselves during the journey.

(d) *Removal to plague hospitals.* The measure is necessary to be enforced for vagrants, friendless strangers, in lodging houses, setais, hostels, etc. In other places having no necessity for interference, free medical attendance and medicines may be given if asked for. Municipalities are directed to disinfect all suspected public conveyances.

(V) *The organization of charity.* The Ward Committees are requested to organise local charities not only for the infected persons, but also for widows and orphans suffering on account of the death of their husbands or parents. Two commissioned medical officers will be deputed to supervise plague measures in Bihar, and especially in the Patna division. The Lieutenant-Governor is pleased to grant thirty thousand rupees for the Patna division,

for Chota Nagpur ten, and for Presidency five thousands. A sum of five thousand either for Burdwan or Chota Nagpur. We are disposed to believe that Burdwan division is in more need of the sum than Chota Nagpur. These grants are in aid and not in the place of local fund expenditure. We are grateful to His Honor for this plague resolution, though we entertain the doubt whether these measures can be gently and fully carried out. There are so many difficulties as to the method of working in consideration of the temper and manner of the officials and the recipients of the charity, we are afraid that the benevolent intention of His Honor can be satisfactorily executed.

REVIEW.

The Chronic Diseases, their Peculiar Nature and their Homœopathic cure, by Dr. Samuel Hahnemann. Translated from the second enlarged German Edition of 1835, by Prof. Louis H. Tafel. Boericke and Tafel, Philadelphia 1896.

The present volume contains only the theoretical portion, and we had the privilege of receiving, through the courtesy of Messrs. Boericke and Tafel, the big volume containing both the theoretical and the materia medica portion of the chronic diseases by Hahnemann. The present volume has nothing new to mark and hence we have not much to say save and except that it is a neatly got up handy book, easy for reference and well suited as a text book for colleges. Hahnemann's *Chronic Diseases* should be read along with his *Organon* for it is no less important than the other.

We refer our readers to the review of the full work which appeared in the July number of 1896, from the pen of our late lamented editor. It would have been well and good for the general public if the author had given us the opportunity of knowing a little more of his own self after the remarks made by our late editor.

There is of course not the least doubt as to the ability of the translator for the very fact of his being selected by Messrs. Boericke and Tafel is a guarantee. The book should be in the hands of every student of Homœopathy and we hope there will soon be a demand for the second edition.

International Homœopathic Medical Directory, 1904. Homœopathic Publishing Company of Warwick Lane, Paternoster Row, London E. C. pp. 121. Price 2s.

The work has attained its tenth year and is becoming more and more accurate every year and hence its usefulness is also increasing. In a work like this we can never expect a thorough and a complete list of all the regular homœopathic practitioners in almost all the countries of the world, but we have here, as far as is possible almost a complete list of the Homœopathic Doctors of the Great Britain and Ireland and of the United States and British America.

The peculiar feature of the present year is that the editor is able to name two homœopathic practitioners in Japan and one in Chili. The book is so cheap and at the same time so useful that every regular practitioner should get a copy of it and try to enrich the future volume with necessary informations.

EDITOR'S NOTES.

The Toxic Properties of Snake Venoms.

Captain George Lamb, M.D., I.M.S., has recently published the details of his investigations into the specific properties of the venom obtained from the snake known as the bandee krait or *Bungarus Fasciatus*. He finds that cases of intoxication with this venom may be divided into three classes ; (1) cases in which rapid death due to intravascular thrombosis follows the intravenous injection of large quantities of venom ; (2) cases, resembling cobra venom intoxication, which present acute nervous symptoms, and which terminate fatally in two or three days ; (3) cases running a more chronic course, terminating fatally between the sixth and the twelfth day, and showing on histological examination a well-marked primary degeneration of the cells of the central nervous system. The blood coagulability is increased when large doses are administered intravenously, but is diminished in the more chronic cases. The action on the red-blood corpuscles is only slightly destructive, and this action appears to be of little or no account so far as the production of symptoms is concerned. In toxicity the venom is much feebler than either cobra or daboia poison. The venom of *Bungarus Fasciatus* is not neutralized either by Calmette's serum or by a serum prepared by Dr. Tidswell, of Sydney, with the poison of another colubrine snake, namely, *Hoplocephalus Curkus*.—*Brit. Med. Journ.*, August 27, 1904.

Seizure and Condemnation of Tuberculous Meat.

In the report of the Select Committee of the House of Commons on the Tuberculosis (Animals) Compensation Bill, 1904, reference was made (*a*) to the variety of practice alleged to exist with regard to the amount of tuberculous deposit the existence of which in a carcass is held to justify its total condemnation ; and (*b*) to complaints made by butchers as to the injury caused to them by their prosecution in open court for having tuberculous meat upon their premises. A circular has been issued by the Local Government Board drawing attention to these two points and making suggestions as to the course which should be pursued by the meat inspectors. The members of the Royal Commission (1898) were of opinion that the entire carcass and all the organs of an animal should be seized under the following conditions : (*a*) when there is miliary tubercu-

losis of both lungs; (*b*) when tuberculous lesions are present in the pleura and peritoneum; (*c*) when tuberculous lesions are present in the muscular system or in the lymphatic glands imbedded in or between the muscles; and (*d*) when tuberculous lesions exist in any part of an emaciated carcass. The Commission further suggested that the carcass if otherwise healthy should not be condemned but every part of it containing tuberculous lesions should be seized (*a*) when the lesions are confined to the lungs and the thoracic lymphatic glands; (*b*) when the lesions are confined to the liver; (*c*) when the lesions are confined to the pharyngeal lymphatic glands; and (*d*) when the lesions are confined to any combination of the foregoing but are collectively small in extent. The Local Government Board, after a full consideration of these recommendations, came to the conclusion that measures more stringent than those advocated by the Royal Commission are not called for.—*Lancet*, October 1, 1904.

Municipal Milk Supply for Infants.

The Bradford Corporation, upon the recommendation of its Health Committee, decided, in the early part of last year, to establish a depot for the supply of modified and sterilized milk. The necessary arrangements were at once made, and by July a depot was opened in one of the most crowded neighbourhoods in the city. At first the demand for the milk was not great, but it steadily increased, and by the end of the year milk was being supplied to forty-five infants whose mothers were unable to suckle them. The scale of charges was fixed as low as possible, 1s. 6d. being the price for a full week's supply for an infant of less than 6 months of age, 1s. 9d. for a child of between 6 and 8 months, and 2s. when the age exceeded 8 months. The milk is supplied in bottles, each containing a sufficient quantity for one meal, every new customer being also furnished with a teat to be used with the bottles. At the same time a sheet containing simple directions for the feeding of infants, for keeping the teats clean, and for warming the bottles, is given to the parent, who is further instructed to report at once if the milk seems not to be agreeing with the child, and to bring it up to the depot once a fortnight so that it may be weighed. The scheme has not so far been a financial success, the loss being at first as much as 30s. a week, and though the deficiency has steadily grown less, the depot is still not self-supporting. In spite of this, however, the Health Committee has

been sufficiently impressed with the partial success of the experiment to decide it to recommend to the Corporation that a central laboratory should be established with depots for distribution in various parts of the city. One reason, perhaps, for the fact that a larger use has not been made of this opportunity provided for obtaining a pure and suitable milk for infants has been that mothers, when they apply, are always urged to suckle their children themselves whenever it is possible, and to resort to artificial feeding only when absolutely necessary. This enlightened policy, though it has interfered with the financial success of the undertaking, will doubtless have been productive of much good indirectly.—*Brit. Med. Journ.*, September 24, 1904.

A Case of Hermaphroditism.

By LIONEL H. MOISER, M.B. LOND., L.R.C.P. LOND., M.R.C.S. ENG.,
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The patient was 19 years of age and rather masculine in appearance. Her voice was lower in tone than that of most women and she had no hair on her face. The hair on the pubes was normal in amount but it did not extend upwards to the umbilicus. The mons veneris was not well developed. The breasts were small and ill-developed, much the same in appearance as ordinary male breasts, and the nipples were small. The labia majora were normal in appearance but the labia minora were very small. The clitoris was very much hypertrophied, being one and a half inches in length and almost half an inch in diameter; the glans and prepuce were well developed, as also was the frenum. There was no meatus at the distal extremity of the clitoris. The meatus urinarius was in the normal position for the female. The vagina was two inches in length and small in circumference, the index finger being inserted with difficulty; the upper end of the vagina was slightly narrowed and blind. The hymen was absent. On examination under an anæsthetic no uterus or ovaries could be felt, neither was there any Fallopian tube. No testicles were felt.

Previously to Christmas, 1903, the patient never menstruated at all, but each month since that time she had had epistaxis, the onset being at regular intervals and each attack lasting about five days. Concurrently with these attacks she had an aching pain in the left ovarian region. Shortly after admission to the Royal Hants County

Hospital on June 18th, 1904, she had a severe attack of pain in the left ovarian region which lasted eight or nine days; there was also slight epistaxis on one or two days. It was thought that she must have an ovary, either in a cystic condition or degenerated in some other way.

A laparotomy was performed to see if anything could be done to relieve the pain; no ovaries, uterus, Fallopian tube, or testicles were found. The vermiform appendix was about three inches in length and contained seven hard faecal concretions. This was removed. Since that time she has not had any recurrence of pain. Her temperature was normal throughout.

For permission to publish these notes I am indebted to Dr. H. E. Wingfield, Physician to the Royal Hants County Hospital.—*Lancet*, October 15, 1904.

Epidemic Glandular Fever of Children.

In a paper read before the Bombay Medical and Physical Society, Lieut.-Col. Bannerman, Director of the Plague Research Laboratory, Bombay, has given an interesting account of the above disease, quoting a most instructive and typical case.

He defines the affection as an acute infectious disease, occurring in children under fourteen years of age, followed, after a few days of fever, by enlargement of lymphatic glands, which are often successively affected, in groups, in various parts of the body, each fresh development being preceded and accompanied by a renewal of the fever, simulating a relapse.

The earliest glands affected are generally those at the back of the neck, or under the sterno-mastoid (the left more commonly than the right), and the enlargement is accompanied by complete loss of appetite, difficulty in swallowing, and often a hoarse croupy cough.

The affected glands seldom or never suppurate, and the fever continues, so long as successive groups of glands are becoming affected; but with gradually abating severity as the cases advance.

The liver and spleen both become enlarged, and hæmorrhagic nephritis sometimes occurs.

The disease is generally prolonged for weeks, but occasionally subsides after only one set of glands has been attacked. Convalescence is always protracted, and in severe cases, is attended with anæmia and emaciation.

The difficulty of swallowing, and the croupy cough, Lieut.-Col.

Bannerman regards as probably reflex pressure symptoms occasioned by enlargement of the bronchial glands.

Diagnosis is arrived at mainly by elimination, the following being the conditions for which it might be mistaken, *viz.*, dentition, malaria, influenza, scarlatina, plague, meningitis, and indolent buboes.

The geographical distribution is extensive, epidemics having been reported from Russia, Germany, England, America and China.

Outbreaks, as a rule, are confined to particular families and but few of the younger members of such escape.

The pathology is still obscure. Dawson Williams suggests that the primary infection is from the intestine, so many cases having enlarged mesenteric glands; and that the left cervical glands are first affected from their relation to the thoracic duct. Hainebach thinks that the infection enters through the pharynx or nasopharynx; but Lieut.-Col. Bannerman considers that if this were so, pharyngitis would be severe instead of invariably slight and sometimes absent.—*Indian Medical Gazette*, Sept. 1904.

Therapeutic Application of Radium.

W. SCHOLTZ (*Deut. Med. Woch.*, January 14th, 1904) finds that the physiological action of these rays are, to a certain extent, like that of Roentgen rays. He experimented with 25 mg. of radium, which was enclosed in a small vulcanite capsule, and covered by a thin mica sheet. The capsule was fastened on to the skin of the animals and human subjects by strips of plaster. After short application—that is, four or five minutes—as is the case with x rays the hair of the part falls out after two or three weeks; after ten to fifteen minutes' application a fairly intense inflammation appears after the same period; after from twenty to thirty minutes' application an ulcerative process, affecting the subcutaneous connective tissue, sets in the third or fourth week. The difference between the action of the radium rays and that of the x rays is well marked in one direction. The visible effects of the latter are manifest after about fourteen days, and only rarely does one come across an erythema after twenty-four hours. This rare appearance, called by Holzkecht "the *Vorreaktion*" (preliminary reaction), is probably not due to the x rays themselves, but to some other factor, in connexion with old tubes. About twenty hours after a short application of radium one

comes across a somewhat intense erythema. This disappears in the course of from four to six days, leaving a brownish pigmentation behind. Scholtz thinks that some use may be made of this erythema, from a therapeutic point of view. Another action of the radium rays is a bactericidal one. In this particular its action is much more powerful than that of x rays, but not so powerful as concentrated light from an iron electrode. In applying this to practice, he considered that it might prove of use in cellular new growths and in some infective processes. Sarcoma, carcinoma, and lupus of the skin appeared to him to deserve some investigation, but he thought that it would be necessary for the rays to be able to act on the deeper layers of the skin. He therefore experimented on the deep action of the rays, and found that after passing through a single rabbit's ear the rays lost about 50 per cent. of their activity, while after passing through twice the thickness from 70 to 75 per cent. was lost. He considers that this is encouraging. The hope that the therapeutic action may be directed toward destroying bacteria is scarcely great since it has been shown that after having placed a tube of radium within 2 mm. of a culture of typhoid bacilli on agar, three hours were required to sterilize the exposed portion of the plate; and it further appeared that one must not expose the skin of a patient for longer than a quarter of an hour, lest ulceration and deep destruction of tissue take place. To overcome this difficulty, at all events in part, he thinks that one may be able to attain the same result by repeating short exposures many times. In this way he tried without success to deal with a furuncle. A case of lupus erythematosus was very slightly improved by a course of applications. With lupus vulgaris, he applied the radium rays until superficial excoriation took place. On this healing it appears as if the lupus had healed as well, but time is needed before definite conclusions can be drawn. He further tried it on two cases of skin carcinoma. In the first case, the growth took the form of a small ulcerated carcinoma of the cheek. The treatment was carried out until a marked amount of inflammation and some ulceration took place. The ulceration healed up slowly leaving a smooth, soft, white scar in its place. The second case also appears to have been cured by the treatment. He considers that one has to gain much more experience yet with this substance before one can come to any definite conclusions.—*Brit. Med. Journ.*, October 15, 1904.

Prevalent Diseases in India.

FROM THE REPORT OF THE IMPERIAL SANITARY COMMISSIONER.

Statistics relating to these are necessarily subject to grave doubt, on account of the absence of a skilled agency for their registration. It is pointed out for example that many deaths due to plague are probably returned as caused by respiratory disease, and deaths from measles and perhaps other eruptive fevers are entered under the head of small-pox. No doubt also, deaths from acute inflammatory affections unduly swell the huge total of "fevers." This total amounted in 1902 to 4,279,551—19·17 per 1,000 of population. The rate in 1901 was 18·73. The increase was probably not due to malaria, for among troops and prisoners whose death statistics rest on scientific diagnosis, there was a decrease in deaths from malarial fever. Moreover, the greatest rise in fever mortality occurred in May—a non-malarious month. Plague, undoubtedly, contributed to this increase and in some parts of Madras and Burmah dengue prevailed, and deaths from this cause, though not numerous, were entered as fever deaths. It is curious to contrast with this formidable rate of 19·1 the fever mortality of European and native troops and of prisoners. The ratios are 4·29, 2·17, and 2·02, the figures for intermittent and remittent fevers combined being 0·70, 2·03 and 1·88. Reference is made to anti-mosquito campaigns in several provinces; but these efforts are evidently tentative and feeble. The distribution and sale of quinine appears to be on the increase in some provinces, in others a decrease took place, while in other provincial reports the subject is not mentioned. "Kala-azar" has decreased in some districts of Assam and increased in other—especially in the Sylhet district of the Surma Valley. Unusual fever mortality in the Hissar district of the Punjab "is ascribed by the Civil Surgeon to cerebro-spinal fever of a very severe and fatal type which prevailed in an epidemic form during the first quarter of 1902."

There was a decrease in the mortality caused by bowel complaints from 2·45 in 1900 and 1·11 in 1901, to 1·06 in the year under report. Unlike fevers the mortality is higher in urban than in rural areas. Tea-garden coolies in Assam die largely from bowel complaints, but it is thought that many deaths from beri-beri ankylostomiasis and chronic fever find a place in this category.

The mortality caused by cholera was 1·01 against 1·21 in 1901, and 3·70 in 1900. Assam again presents a maximum of 2·40 followed closely by Bengal with 2·02. There was no cholera in the North-

West Frontier and Central Provinces and Upper Burma, and the cholera rates of other provinces were inconsiderable. The rates in Assam tea gardens were higher than the provincial rate, except in Sylhet. The cholera mortality of coolie emmigrants was only 0·9 per mille. The inoculations performed among this class amounted to 3,144. Arrangements have been made for having all coolies inoculated at Assansol. Of 106 inoculated coolies only one was attacked, and of 1,192 uninoculated eighteen were attacked and four died.

There was an increase in small-pox mortality, the ratio being 0·52 against 0·44 in 1901. Inoculation is blamed for severe outbreaks in the Surma Valley, and arrangements for vaccination are reported to defective in several provinces.

There was an advance in the mortality caused by plague, the number of deaths being 583,937, against 283,788 in 1901. The Bombay Presidency again heads the list with a plague mortality of 10 per mille; the Punjab comes next, with 8·52; then follow on a lower level Berar (1·55), United Provinces of Agra and Oudh (0·84), and Bengal (0·44). The only provinces that were entirely exempt were Assam, Burmah, and Ajmere-Merwara. Deaths in the city of Bombay amounted to 13,786, and in Calcutta to 7,278. In some Punjab villages from 20 to 40 per cent. of the population perished from plague. Some interesting notes are given regarding recent researches concerning the identification and vitality of the plague bacillus, the agency of rats and fleas in its dissemination, and the value of some prophylactic measures. Simpson's conclusion, from study of the Hong Kong plague, is that "infection is carried from place to place by individuals and from house to house by rats." The question as regards the agency of fleas is still unsettled. The Sydney experience goes to favour their intermediacy, but additional observation and experiment are necessary. The failure of the Punjab inoculation campaign is chronicled, and the preventive efficiency of evacuation and disinfection finds fresh illustration. The outlook as concerns plague in India is not promising. The disease has now prevailed continuously for eight years, and shows signs of increase and spread rather than decline. There was a substantial rise in Bombay Presidency, where it first appeared, and where indications of abatement might first be expected. There was a large increase of mortality in the Punjab, the United Provinces, Madras, Mysore, and a fresh invasion of Berar. The only province that shows a decrease is Bengal, but the death-roll amounts to 32,967.—*Brit. Med. Journ.*, September 24, 1904.

Niels Ryberg Finsen, M.D.

Dr. Niels Ryberg Finsen, whose name is known to the whole civilized world as the inventor of the method of treating certain diseases of the skin by the application of decolourized light rays, died at Copenhagen on Saturday, September 24th, in the 44th year of his age.

He was born at Thorshavn in the Faroe Islands in 1860. He began the study of medicine at the medical school of Reykjavik, the capital of the Islands, and later proceeded to Copenhagen, where he took his Doctor's degree in 1890. For a year after graduation he was Demonstrator of Anatomy in the University of Copenhagen. During that time he made researches on the effect of light on biological processes. The bactericidal effect of light had been noted by previous observers. Experiments on this point led Duclaux to the conclusion that sunlight was at once the most universal, the most economic, and the most active agent in sanitation, private or public, and the researches of Downes and Blunt showed that this effect was due in great part, if not exclusively, to the chemical rays. It had often been observed that horses and horned cattle are, like man, subject to solar erythema, affecting almost exclusively non-pigmented parts of the skin. Charcot had in 1859 expressed the opinion that it was the chemical and not the heat rays which cause erythema, and that the dermatitis caused by a powerful electric light was identical with sunburn. The scientific proof of this hypothesis was given by Widmark of Stockholm in 1889, who proved that the ultra-violet rays are the most active in producing this effect. The fact that inflammation of the healthy skin could be produced by the influence of chemical rays suggested to Finsen the possibility of utilizing this action on diseased skin. On this assumption was based a proposal made by him in 1893 that sufferers from small-pox should be kept in rooms from which the chemical rays were excluded by interposed red glasses or thick red curtains. The result of this treatment was, according to him, that the vesicles did not suppurate and no scars were left. A like method was, as is well known, used by John of Gaddesden in the treatment of a Prince of Wales in the fourteenth century, and had long been in use, as Finsen himself pointed out, as a popular remedy in Roumania, Tonquin, and Japan. This, however, in no way lessens the credit due to Finsen for his scientific demonstration of a treatment which previously had no better foundation than the rudest empiricism. The first report of his experiments and observations on the subject was published in the *Copenhagen Hos-*

pitalstidende of July 6th, 1893; in the following year there appeared a monograph, entitled *Chemical Rays and Variola*, and further observations on the red-light treatment of small-pox were contained in papers by Finsen published in the *BRITISH MEDICAL JOURNAL* of December 7th, 1895, and June 6th, 1903. As to the real value of the treatment there is considerable difference of opinion, and Finsen's conclusions were adversely criticized by more than one competent observer on the ground of practical experience gained during the recent epidemic of small-pox in America.

The bactericidal properties of the chemical rays were later applied by Finsen to the treatment of lupus vulgaris; and so striking were the results, that in 1896 an institute was founded at Copenhagen "for the prosecution of investigations as to the action of light on living organisms, and principally for the furtherance of the application of the results to the purposes of practical medicine." This Institute, of which Dr. Finsen was appointed Director, was erected largely at the expense of two public-spirited citizens, Messrs. G. A. Hagemann and Vilh. Jørgensen, and received a subvention from the State. The method is too well known to need description here. A full account of it was given (with Finsen's authority) by his assistant, Dr. Valdemar Bie in the *British Medical Journal* of September 30th, 1899. At that time some 350 cases of lupus vulgaris had been treated, in all of which the result was said to be satisfactory. In lupus erythematosus the effect, though in many cases excellent, was said to be not nearly so certain as in lupus vulgaris. Finsen's latest publication on the subject, which brings the record up to October 1st, 1902, gives the total number of cases treated up to that date as 804, of which 412 were "cured" and 192 "nearly cured." After allowing for cases in which the patients died from intercurrent diseases or for one reason or another discontinued the treatment, there were only 16 in which the result was described as "not satisfactory"—in other words, the failures were only 2 per cent.

The Light Institute of Copenhagen has grown from small beginnings to a kind of medical Mecca whither patients and physicians from all parts of the world have flocked during the last half-dozen years. It has now a staff of six medical men and sixty nurses, and some 1,800 patients have been treated. The time has not yet come for a definitive estimate of the value of Finsen's work. It was natural that so brilliant an addition to our therapeutic resources should have been hailed with enthusiasm by the medical profession; but it must be added that this enthusiasm has led to a certain amount of exaggera-

tion. Finsen, who was the most modest and honest of scientific workers, became the prey of the journalist, who cares more for effect than for sober truth, and the plain facts have been shown to the public through a highly-magnifying medium. What is worse, Finsen's discovery has been exploited as a means of advertising institutions needing no such questionable aid. The method has been described as painless and infallible—epithets which are simply misleading. Authorities are still much divided as to the true place of the method in therapeutics. However the fact is to be explained, the ultimate results of the treatment have not been so satisfactory in the hands of most practitioners in other countries as those recorded at Copenhagen. Whatever discount it may be necessary to make on this score, it must be allowed that Finsen has written his name in imperishable characters in the history of medicine. Although both solar and electric light had previously, as he himself acknowledged, been employed for the treatment of lupus, to him belongs the credit of having placed the method on a scientific basis and of having devised most ingenious apparatus for its practical application. He had indeed an inventive genius that might have won for him vast wealth had he deigned to put the gift to commercial use. Among his inventions are said to have been such widely different things as an improved breech-loader, a cooking apparatus, and a cool summer-house.

The work accomplished by Finsen is all the more remarkable since during the greater part of his professional life he suffered from a degree of ill-health that would have made most men incapable of work of any kind. During the last three years he had been practically confined to his bed. Up to the last, however, his mind remained clear and vigorous, and he was keenly interested in the progress of science, and in everything concerning the Institute of which he was the founder. His countrymen were naturally proud of him, and from the Royal Family of Denmark, from our own Queen, and from several other crowned heads, he received many marks of esteem and friendship. The German Emperor, who visited him in his sick room, is said to have declared that he ought to have a monument erected to him during his life. The regard of these Royal personages is the more remarkable since he was a strong Radical in political opinion, and spoke his mind with perfect freedom.

Although a poor man, Finsen insisted on handing over to the Light Institute a considerable part of the Noble Prize which was awarded to him last year. His discovery brought him fame, but not wealth.

All the profit he derived from it was a salary of £300 a year, paid him by the Danish Government.

Few men have been more animated by disinterested zeal for the benefit of humanity than Niels Finsen. His life was in his work, and the record of that work is comprised in three or four papers which together make up a booklet not exceeding an average pamphlet in size. Small as it is he had a difficulty in finding a publisher in Germany. An English translation of it, by Dr. J. H. Sequeira, of the London Hospital, was published, under the title of *Phototherapy* in 1901.

Finsen was a man of the most straightforward and honourable character, and of very amiable disposition. The long martyrdom of a complicated illness was endured with cheerful fortitude and he looked forward to death, which for him was the wreck of larger hopes of achievement and glory than are given to most men, with philosophic resignation. He bore the load of honours thrust upon him from all quarters with charming modesty, and he received the intimation that the Noble Prize had been awarded to him with the quiet remark that it was given to him because it was known that he would be alive to receive it later.

Finsen, from taste as well as owing to the conditions of his life, was more a scientist than a physician. None the less, he was one of the men of whom the medical profession has most reason to be proud. —*Brit. Med. Journ.*, October 1, 1904.

CLINICAL RECORD.

Foreign.

CAMPHOR IN ACUTE ARTICULAR RHEUMATISM.

BY DR. SCHLEGEL, TUEBINGEN.

Translated for the Homœopathic Recorder from *Allg. Hom. Zeit.*

I would here make a brief report of an epidemic of acute articular rheumatism, which was confined to one house.

In the family of a farmer living near this place about five years ago, a son, aged seventeen years, had died of heart disease, a consequence of acute rheumatism (which had *not* been treated homœopathically). Since then there have been in this family, several cases of a lighter nature, which were treated by me. A little daughter, three years age, had chorea and recovered, though she retained a murmur of the heart without other injurious consequence. Now, in the course of last fall five children of the family were taken ill with acute rheumatism. In one case merely one knee-joint was affected, without necessitating an absolute cessation from work. But the other four cases were more severe, and these were daughters, respectively twenty-four, twenty, fifteen and eleven years of age. The first two had had the disease some years before, but the last two had rheumatism then for the first time.

Besides these cases, in the adjoining building (belonging to the same owner) a printer's apprentice, sixteen years old, was taken sick. This case, also under my treatment, proved rather light, with a brief period of taking care and of keeping the bed. A slight systolic murmur of the heart and a strikingly accelerated pulse were present from the first, also in this case. With these four girls nearly all the larger joints were attacked, but the disease had a tolerably favorable course; only each one of these patients had occasional attacks of violent pains in one or the other of the joints, or in the neck, the pectoral muscles, angina of the heart; the two older girls, at the height of the disease, had severe and exhaustive *retching*; all had to vomit several times. There was pretty severe occasional perspiration, but with three of the patients these changed into states of collapse, with chills and cold, so that the patient longed for the return of the perspiration, which, before, they had deemed so troublesome. Among these conditions the angina, the heart troubles and the pains in the joints were the most threatening, though in none of

these cases was there induced any organic change in the heart; the trouble was confined to a functional disturbance and morbid sensations. I believe that such a favorable course of this disease is mainly secured by avoiding a local mode of treatment with cold or a narcotizing treatment. The treatment was, of course, homoeopathic, with the well-known remedies. The chief reason which led me to make this report, however, was the remarkable good effects yielded in these alarming conditions by *Camphor*. Some fifteen years ago, during the first great epidemic of influenza, I had to treat the case of a young man, eighteen years old, which began with a violent inflammation of the right shoulder, attended with a long continued chill, during which I also employed *Camphor* (2, dilut.), which was then frequently used. The whole disease was aborted by this remedy, so that my patient could go to work again in a week, though there remained also in this case a murmur of the heart, which caused his exemption from military service.

Now, when one of these girls after the other showed these symptoms, attended with chills, great anxiety and a sunken cast of features, and when the girl who was fifteen years of age even declared that she was dying, I was at once reminded of this action of *Camphor*, the more as the symptoms in these cases seemed to present the exact homoeopathic indications for *Camphor*. So I at once gave them some drops of *Camphora* 2, repeating it at every more pronounced appearance of angina and chill, or in the more severe attacks of pains in the joints. The effects were brilliant in all three of the patients who showed these symptoms, and the parents were delighted with the possession of a remedy which in a short time removed all the alarming symptoms, quickly restoring with the patients the normal bodily temperature and the tendency to perspire, also removing the heart symptoms and the violent pains in the joints. Their recovery is now proceeding favorably.

It might prove worth while, even where the camphor-symptoms are less pronounced, to try this remedy in the treatment of this troublesome and severe acute infectious disease, and to communicate the results. In *Camphor* we have a remedy which acts very quickly, so that it would appear very soon, whether it is of any use in the disease, or whether it is necessary to investigate more closely the symptomatology. It may be indicated only occasionally in certain epidemic cases, but it may be of use more frequently and would then prove all the more valuable.

The brother of these girls, whose case was lighter, recovered from his pains in the knee which were aggravated from day to day by merely putting some *raw Sulphur* into the shoe of the side affected (in the form of a strip of sulphur). He received no other remedy. When the other patients were able to get up, I directed them to put some *Sulphur* in their shoes, a well-known remedy for guarding against infection and intended in these cases as a guard against a relapse. The same remedy is also frequently very effective in ischias. —*Homœopathic Recorder*, October 15, 1904.

DIABETES.

BY DR. STAUFFER, MUNICH.

Translated for the Homœopathic Recorder from the *Allg. Hom. Zeit.*,
July 28, 1904.

Mrs. V. F., sixty-five years of age, came under my treatment January 9, 1903. She complained of general *debility* and great weariness, disinclination to work and a depression and melancholy, such as she had never known before. Her moods vary, as she is sometimes irritable, then again inclined to weep. There is little appetite, but much *thirst*, also a tendency to *perspire*, with hot skin. Cough with copious mucous expectoration. *Œdema* on both ankles. Severe *pain in the small of the back*, especially on the right side, better while lying down. These ailments had gradually grown worse in the course of last year. Besides this, in consequence of a deep rupture of the *perinæum*, there had been for years a *prolapsus ani* and a sinking down of the uterus; also a tendency to *diarrhœa*, and frequently involuntary stools, in consequence of the defective action of the sphincter ani. Frequent urging to micturition, the quantity of urine discharged daily being between two and three quarts. The skin generally feels hot and moist. Obscurity of vision, especially in a bright light. The visual power of both eyes is depressed, it is quite impossible for her to read small print, even with the spectacles ordered a short time before.

She is large and of imposing appearance, with a strongly developed adipose cushion; the face is bloated, but nothing additional can be reported as to the organs, except a slight bronchitis and a slight fatty enlargement of the heart. In both eyes there is *incipient cataract*: an examination of the urine showed a specific gravity of 1025, with 4 per cent. of sugar; a tendency to accumulate fat, and *prolapsus ani*. It can not be exactly determined how long the diabetes has existed, as, strange to say, the urine had never been examined; it must in any case have existed for a year—to judge from the symptoms and from the cataracts, which were probably due to it. In correspondence with the symptoms, the patient received *Acid phosphor.* 3, three drops, thrice a day.

January 24, 1903. Sugar, 2 per cent. Purposely, there was no strict sugar diet. The strength and mood is decidedly better. *Acid. phosphor.* 3, contin.

Feb. 6. Sugar, 1 per cent. The general condition is much improved. Diarrhœa has ceased. Perspiration and thirst are slight. Appetite excellent. Urging to micturition less troublesome, the quantity of urine about two quarts.

Feb. 12. No further improvement: *Kreosotum* 4, three drops, thrice a day.

Feb. 26. Free from sugar. Condition good, except the pains in the small of the back on the right side and in the region of the sacro-lumbar joint. Hæmorrhoidal knots appear and discharge blood. Prescription: *Æsculus hipp.* 4, three drops, thrice a day.

March 4. No sugar. The pain in the back has disappeared, the hæmorrhoids are better. An intercurrent ischias on the left side and simultaneous violent diarrhœa with a cutting colic called for *Colocynth.* 3, as an intermediate remedy. This was given in frequent doses. Curious to relate, the patient herself stated that after this remedy the *prolapsus ani* was much improved, and this effect has persisted till to-day. In reading up *Jahr's symptomen-Codex* later on, I found under *Colocynth.*: "Paralysis of the *sphincter ani*." I will leave it undecided whether the effect mentioned should be ascribed to this remedy in this chronic case? I could more easily understand this in a case of an acute violent diarrhœa with prolapsus of the mucous membrane.

In the further course of the treatment, the sugar never returned. On account of the obscuration of the lense, the patient received consecutively: *Natrum mur.* 30, *Caust.* 6, *Calcarea carb.* 6 and 12. By May 13, 1903, the bodily weight had diminished by ten kilos; the general health was good. By June 17 the obscuration of the lenses had disappeared, and the patient with her spectacles could read even the smallest print.

I would not affirm that every cataract can be cured with homœopathic remedies, but this obscuration of the lenses, accompanying diabetes, disappeared, and neither the obscuration nor the sugar have returned to this day.—*Homœopathic Recorder*, Oct. 15, 1904.

Gleanings from Contemporary Literature.

RHEUMATIC HEART DISEASE IN CHILDREN.

BY BYERS MOIR, M. D.

PHYSICIAN TO THE LONDON HOMEOPATHIC HOSPITAL.

FEW can see much of London hospital work without being aware of the gravity of rheumatic disease of the heart as a factor in the death rate, and also that in the poorer classes, after the first attack, the sufferers are heavily handicapped in the struggle for existence; in fact, a large proportion of the cases, after repeated attacks, succumb before reaching maturity.

We have seen in late years the good that is being done by the crusade against tuberculosis, and there is just as much need for a crusade against acute rheumatism, which, in some ways, is a more distressing malady, and yet is just as preventable.

Acute rheumatism has been too much looked upon as a multiple arthritis, instead of a specific infection, in which the joints, the heart, or the brain may be attacked.

While in adults the joints are most frequently affected, in the large proportion of cases in children it is the heart and pericardium that suffer.

As to the insidious nature of the onset there is no need to dwell; we see too many cases of unsuspected heart trouble among the out-patients. My own experience in the wards has been that, while in a first attack in a person of over 25 it is rare to get the heart attacked, in those under fifteen years of age few escape without more or less permanent mischief to the valves or pericardium.

We have, at present, no reasons that can explain why the heart in children should be so much more susceptible to the poison than in adults, but I have lately been tabulating some cases that I think bear upon this. I have been struck in a good many cases, where rapid growth is going on with the evidence of a very feeble heart's action and weak circulation—as if the heart did not keep pace with the general body growth—thus I have noted in several cases where the pulse rate was only 52 (instead of 80 to 90) with very low tension; and an organ in such a feeble state must be much more susceptible to the poison than when there is a strong and active circulation.

It is also hard to say whether our remedies do much in preventing heart troubles, for, taking the last forty-seven cases admitted into Barton and Vaughan-Morgan wards, in only two (one at 3 years old) is the attack stated to be the first—and both of these had heart trouble on admission—in two others there was no history of acute rheumatism, only of slight wandering pains in the joints. In all the rest there was a definite history of acute rheumatism, the number of previous attacks varying from one to nine.

Our difficulty in hospital work is to get a sufficient number of cases without definite signs of endo-or peri-carditis or both when admitted.

In all cases of acute rheumatism the heart is very liable to dilatation, quite apart from any distinct endocarditis; this is probably due to the effect of the toxins on the muscles of the heart in the same way that occurs in influenza and diphtheria.

There may be quite in the early stages a well-marked systolic mitral murmur, and we have no means as yet, except by the after progress of the case, of deciding whether this is due to valvular defect or simple dilatation. In the majority of cases, however, there is little doubt, as we have definite signs of both peri-and endo-carditis.

The following is a typical case :—

F. H., a boy of twelve. Has had three attacks of acute rheumatism with heart trouble. The first attack when 8 years old. His pulse was 80. Temperature, 99·6. Respiration, 32. Apex beat was in the sixth interspace, one inch outside the nipple line, with visible impulse, and indrawing of the fifth and sixth interspaces, *Cardiac dulness* was, upper limit, second intercostal space. Left limit a curved line from second space, two inches from the sternum, passing outside nipple line to apex beat. Right limit, half an inch to right of sternum at second space, and one and a half inches at the fifth space.

At the apex there was a blowing systolic murmur conducted into the axilla, the second sound being much accentuated in the pulmonary area. In the middle of the præcordial area, *i. e.*, over the inner ends of the third and fourth spaces and corresponding part of the sternum, there was a rough superficial pericardial friction sound, having the usual to and fro character, and increased by pressure.

We have here evidence of a very large dull area, and this increased dulness is seldom due to effusion, which is rare in these cases—but depends upon a dilatation of the heart, which is greater than could be accounted for by the mitral trouble—but is nearly always found where the pericardium is much involved.

Dr. Leonard Hill some years ago showed by experiments that when the pericardium is healthy it is very difficult to obtain any dilatation of the heart, but when a slit is made into the pericardium, or the walls are softened by disease, it is quite easy to obtain extensive dilatation.

While the seriousness of valvular lesions, especially when the aortic valves are involved, has been fully realised, it is only lately that the gravity of pericarditis has been recognised, for when that has occurred to any extent and caused adhesious dilatation becomes permanent.

In nearly all our fatal cases a more or less completely adherent pericardium is found. Dr. Lees, in a paper read before the British Medical Association in 1898, gave the results of 150 *Post mortems* in rheumatic heart disease of children. "In only nine was the pericardium found healthy. It was found to be more or less adherent in 113 cases (75 per cent.), and in 77 of these, or in one half of the entire number, the adhesion was

complete over the whole surface of the heart. In only 38 cases of the 150 (or 25 per cent.) was it noted that any fluid at all was present in the pericardial cavity, and in many of these the amount was small, in only six more than 3 oz.

The mortality of these cases is very heavy, for of the forty-seven cases I mentioned before treated in the hospital, ten died. Some years ago the late Rector of this parish told me that the hospital had a special reputation for the treatment of rheumatic fever; and, while pleased to hear it, my own feeling was that it left much to be desired. And I hope that these two papers may give an impetus towards further work in the treatment of acute rheumatism.

We have a long list of drugs which are used, and though this evening is supposed to be given up to *materia medica*, I have only time now to touch very lightly upon a few of them:

Aconite, according to Dr. Hughes, is truly homœopathic to the rheumatic poison, and especially to the cardiac condition. Dr. Jousset found that the introduction of increasing doses of the extract into the circulation had the invariable result of producing lesions of the mitral valve. I think myself that if its administration is begun early in a case and persevered with, it has a decided action as a protection from cardiac complications.

Bryonia comes next, and is certainly homœopathic to the joint troubles, but is also of use in the pericarditis; in provers it has produced severe cutting and shooting pains in the cardiac region, but for the acute cardiac pain which we so often find, I find much more benefit from *spigelia*, which seldom fails to give relief. In Hughes' *Drug Pathogenesis* there are no indications for its use in heart affection, but Clarke, in his Dictionary, gives plenty of them.

Cactus is a remedy which I have had some very good results from. I would place its action between that of aconite and digitalis. It certainly seems to control the inflammatory condition, and, at the same time, to strengthen the heart's contraction. In its provings it seems to have the power of producing peri- and myo-carditis, and to give a better picture of the rheumatic cardiacis than any other drug.

Dr. Rubini, who introduced it into practice, advised that while in nervous diseases of the heart the higher dilutions should be used, in organic diseases of the heart it should be given in doses from one to ten drops of the tincture. I have used from two to five drops, according to the age of the patient.

Colchicum or colchicine is another remedy of great value in pericarditis.

We have no lack of remedies, but want more careful observations on their effects; and I hope, with the help of Col. Deane, who has given me some fresh venom he brought from India, to test the value of some of the snake poisons. *Naja* ought to be of especial value.

In turning to the treatment of the old school, for some time the view was held that the salicylates were dangerous when cardiac troubles

supervened, and should be discontinued, but the latest teaching by Dr. Lees is the following :--

"Observation of the effects of salicylate in the treatment of acute rheumatism, both in children and adults, has led me to the conviction that it is as truly antirheumatic, as quinine is antimalarial or mercury antisypilitic. But it must, of course be given in adequate doses, and its use must not be too soon relinquished. For an adult, 20 grains of sodium salicylate with 40 grains of sodium bicarbonate should be given every two hours during the day and every four hours during the night. For a child of 6 to 10 years of age, 10 grains of salicylate and 20 grains of bicarbonate at the same intervals; this amounts to a daily dose of 100 grains of salicylate. After a day or two, 15 grains of the salicylate with 30 grains of the bicarbonate may be given, and, if necessary, this may be increased to 20 and 40 grains respectively the total daily amount being 150 or 200 grains.

"Children require proportionately larger doses than adults, for in them the rheumatic affection is much more intense. It is rare for an adult to die from his first rheumatic attack, but this disaster is by no means uncommon in childhood. Fortunately, children usually bear salicylate well, in them it seldom causes much vomiting, often none at all, and they hardly ever complain of the deafness, tinnitus and headache which are troublesome in adults, nor do they often manifest the mental symptoms, and the tendency to delirium which are sometimes caused by the drug in later life."

Dr. Lees certainly has the courage of his convictions, and with this treatment I do not wonder that he finds it not uncommon for a child to die in its first rheumatic attack.

While there is no question that salicylates do relieve the joint pains of acute rheumatism, that it is any way a specific has yet to be proved, and it must take a child some time to recover from the effects of the drug. At the same time a good proving of the salicylates is wanted, and I hope the new association may soon give it us. In the meantime there is one going on in America. At Washington the preservatives of food are being tested carefully on healthy men, set apart for the purpose. Boric acid has, I believe, been found to be inert, and the properties of salicylates are now being tested, so I hope we may be able to get a full report of the trial.

Some of you have, I have no doubt, seen an interesting article on doctors in the last number of the *National Review*, by Mrs. Earle. She does not spare them, but her chief contention is that doctors do nothing, or not enough, to keep people well, and rely too much upon drug giving. With this I think we can agree, and we know quite enough of the laws of healthy life for children for the prevention of diseases like acute rheumatism if they could be put in force, but this does not rest upon doctors alone.

It is noticeable at once that we find these cases as a rule from the poorest homes, and the worst physically developed. Dr. Day has shown us to-night a specimen of the feeding of an infant of 6½ months, and improper food I place as one of the great causes. Nitrogenous food given too early and too much soon leads to anæmia, this with poor physical development—especially of respiration—bad air, and exposure to chills, yields a fertile soil for the development of the germs.

It is in the prevention that we must look for our real success, but much more care should be given to guard against the frequent relapses. In hospital there is always the desire to get out cases as soon as possible, and relapse is frequently the consequence. The anæmia after an attack is most marked, and by careful after-treatment by food, drugs and physical development, many cases could be saved, and enabled to lead useful lives.

Dr. BLACKLEY desired to ask Dr. Watkins with regard to the inoculations of animals with the micrococcus of acute rheumatism, Were the inoculations intraperitoneal, or were they intravascular? Also, what were the grounds for suggesting that acute rheumatism was a contagious disease? There had been many cases of acute rheumatism in the hospital recently, and he had been under the strong impression that the large number of such cases was attributable to the increased rainfall during the last twelve or eighteen months. He formed this opinion from long acquaintance with the hospital. During a long wet summer and autumn the cases of acute rheumatism or rheumatic fever were likely to be very numerous. Acute rheumatism was much commoner in London than in the provinces, certainly commoner than in Manchester, Liverpool or Leeds, all of which he knew well. Several members of the staff of the hospital attributed this fact to the beer-drinking habits of the people of London, compared with the habits of the provincials. One item of treatment which he had been trying with satisfaction both in hospital and in private, consisted in local applications to the affected joints of salicylate of methyl. This gave very good results as far as relief of pain was concerned. He quite agreed with Dr. Moir's suggestion that there still remained plenty of room for investigation as to the precise mode of action of the salicylates: for, with all their faults, there was no question whatever that they had a very decided effect, and he still had a secret regard for the drug himself as a specific in acute rheumatism. He might be utterly mistaken, but as in quinine one had such an undoubted specific for malarial fever, and as quinine and salicine were so extremely alike in their chemical constitution, and in many other ways, it seemed more than probable that salicine, salicylic acid and aspirin, which was a form of salicylate, would turn out to be a specific microbicide. He would have been glad to hear a word or two from both Dr. Watkins and Dr. Byrnes Moir on the subject of hyperpyrexia, also on the cold bath treatment.

Lient-Col. DEANE said he would like to hear from Dr. Watkins and Dr. Moir a definition of what constituted a relapse. Both authors referred to relapse, and to the subject of prevention of relapse. As Dr. Byres Moir had pointed out, the initial predisposing condition of the first attack of rheumatic fever was *anæmia* and malnutrition; and the continuance or resumption of those conditions when the child left the hospital was apparently the cause of another attack. He (Colonel Deane) could well understand that, but on looking at the chart which compared homœopathic with the other forms of treatment, it did not seem so clear. The salicylate treatment resulted in five days acute symptoms, after which the patient got a relapse before he left the hospital, which in some of the cases, looked very like the symptoms having been masked or held in abeyance by treatment, breaking out again when the effects of the drug had passed off. Did Dr. Byres Moir refer to a relapse in that sense? He thought not.

Dr. GOLDSBROUGH wished to join those who had already spoken in praise of the papers which had been read, more especially that of Dr. Watkins, which was so elaborate and full of information. He (Dr. Goldsbrough) had not given salicylate. All the cases he had seen had been treated homœopathically. He thought some importance attached in acute rheumatism to giving a single remedy. Following a suggestion of Dr. Burwood he had been led to the following way of giving remedies in acute rheumatism, for example, *aconite* in the day and *bryonia* at night, or *vice versa*. It would seem that giving the single remedy had a better effect than using remedies in alternation. The dilution of *bryonia* was also a matter of considerable importance. Probably some members of this Society would remember a paper by Dr. Madden, many years ago, when he was in Birmingham, on published cases of rheumatism treated by mother tincture of *bryonia* alone. Some cases seemed to benefit by that strength of the medicine; it should be given every two or three hours. On the other hand there were cases which did very much better on higher dilutions of *bryonia*. If the stronger tincture did not avail, then going to 6 and 12 given alone seemed to have a marked effect on the symptoms. With regard to diet, Dr. Watkins mentioned casually that, theoretically, farinaceous food was contraindicated. He (Dr. Goldsbrough) had for many years been in the habit of prohibiting all farinaceous and nitrogenous foods except milk, treating the patient only with milk and water and fruit, and he thought they did better on that diet than on any other. The most beneficial fruits seemed to be oranges and grapes without sugar. The hospital cases he had treated had done well on those lines. But he thought a patient could be overfed, even on milk, and the quantity could be limited and diluted with water with great benefit to the patient. When the patient was convalescing the resumption of the ordinary dietary should be delayed until it seemed quite safe, until every vestige of pyrexia and the rheumatic joint affection had passed off. Genuine hyperpyrexia acute rheumatism he had regarded as evidence of the disorganisa-

tion of the heat centre of the nervous system. When the temperature reached 106° , 107° or 108° without any increase in the joint affection, it was clear that there was some other influence at work which one could not but conclude was a disorganisation of the heat-producing mechanism. From the arguments used by Dr. Watkins it did not seem that he could prove acute rheumatism was infectious. It was infective in a sense, *i. e.*, if the parasite obtained entrance into a person with a susceptible constitution the disease would result, but it did not follow that the disease would be spread on that account to other people. With all the large number of cases he had seen and watched, he did not remember more than one case in one house at a time. With regard to Dr. Moir's remarks on heart disease in children, he thought if the cases could be got early enough there was nothing more successful in acute disease than the treatment of acute rheumatism in children, and it was possible for their hearts to thoroughly recover. He had an instance in his own son, who had tricuspid involvement, endocarditis and pleurisy, and with it he had a defect in the valve which remained for some time. But he thoroughly recovered, and there was now no trace of any abnormal condition, though of course care had to be taken that he was not placed in the way of the disease. Dr. Goldsbrough had had the opportunity of watching other children who also were free from recurrence later in life.

• Dr. WYNN THOMAS supported the remarks of Dr. Goldsbrough with regard to the higher dilutions of bryonia and aconite. He could recall the case of a young lady, aged 18 who had been taking mother-tincture of bryonia two days with no difference in her symptoms: there was still high fever and severe pains in the joints. He mixed some bryonia, 3c, 10 drops in a tumbler of water, and she took a dessert-spoonful every two hours. After her second dose the pain vanished completely, the temperature came down from that time, and she had no pains of any severity afterwards. That case was remarkable for the suddenness with which it responded to the higher dilution when the stronger tincture had no apparent influence. Another medicine he had used in rheumatic fever where the perspiration was sour was *mercuris vivus* 3x. He obtained very good results from it. He also reminded the Society of the paper read by Dr. Percy Wilde in 1893, in which was advocated the treatment adopted at Bath of putting patients into hot vapour. In a series of 100 cases none developed cardiac complications. Dr. Thomas had been in the habit of treating his cases of acute rheumatism with a lamp bath in bed, with the patient lying down. If the patient was in a high fever with the heart beating quickly, it was less trying to take the bath lying down. It usually resulted in the elevation of the patient's temperature while in the bath. He was always glad to see the temperature go up under the influence of the bath, because patients then did very much better afterwards.

Dr. LAMBERT thought the orthodox procedure was to begin with aconite and bryonia, or one or both of them. It seemed to him that this

was limiting the treatment a great deal too much. Other drugs had produced the symptoms like those of acute rheumatism. For instance rhus. He had seen patients treated with aconite and bryonia who were tossing about the bed in intense agony. Such cases called for rhus, not bryonia. He was sure that symptoms indicating rhus would be found if they were looked for. He did not see the force of Dr. Watkins' argument with reference to apis not being indicated in connection with, say, erythema nodosum. Dr. Lambert had no doubt that apis was indicated also in some cases of acute rheumatism. On the theory that bee-keepers were immune, the treatment of allowing oneself to be stung by so many bees had been practised. Dr. Green's suggestion about proving formic acid was a very good one. Certainly apis ought to be considered. Belladonna was another drug which should be thought of in acute rheumatism.

Dr. EADIE asked whether Dr. Watkins intended to imply that the effects of inoculation of the micrococci into animals was necessarily a proof that the condition induced was rheumatic. He believed that the commonest condition which would produce chorea in dogs was distemper, but he never saw or heard of a case in which rheumatism produced it. That fact had often led him no doubt whether chorea was rheumatic. He had never seen a case of chorea following rheumatism in animals. Again, according to text-books of veterinary practice, rheumatism in animals nearly always occurred in damp stables. Also it affected hounds which were in damp kennels.

Dr. ROBERTSON DAY said in order to make comparisons of value it would be necessary to have statistics of patients treated on the expectant plan, as well as by other methods. There had been a comparison between the results of homœopathy and salicylate treatment, but the results of treatment of the similar number of patients on the expectant method should have been added. One might say a word about the preventive treatment. When one had to deal with rheumatic patients they should be especially guarded not only in the matter of surroundings, but dietetically.

Dr. HEY said that in 1902 he had a well-known Scotch bee-keeper under his care with a very severe attack of subacute rheumatism, affecting chiefly the joints, and he had suffered from the disease several times before. He asked how long Dr. Watkins and Dr. Moir would keep the rheumatic patient in bed after the acute symptoms had subsided if there were marked evidences of endocarditis. With regard to rheumatic periostitis in connection with salicylic treatment about Christmas time last year he met an Edinburgh medical man who was an ardent allopath, and who had been suffering from rheumatic periostitis for some days, and he had tried many things for it, including hot soda baths, salicine, salicylic acid in huge doses, but got no benefit. He gave him bryonia 3x, and after the first three doses he had no return of the periostitis while under observation.

Dr. GRANTHAM HILL said that amongst bee-farmers in certain districts of New South Wales (Australia) the treatment of rheumatic arthritis by allowing the affected limb to be stung by bees was a recognised form of treatment. He thought this treatment originated by a bee-farmer being accidentally stung, and noticing that his rheumatism was improved by this occurrence. On getting a second attack of the disease he repeated the performance with good results.

The PRESIDENT said he had enjoyed the papers and the subsequent discussion very much. One case which occurred twenty-three years ago remained in his memory. It was that of a young lady with hip-joint disease, and was supposed to have been brought on by the fact that she could not take sufficient exercise. She had a well-marked attack. It was when salicylates were very much in vogue, and he treated her for three or four days with salicylates, but without the slightest benefit, indeed she got worse, and the fever higher. He stopped the treatment, and put her upon bryonia and aconite, with the result that in two days she was free from fever and joint trouble.

Dr. Watkins, in reply, said his paper did not so much insist on the infectious as on the infective nature of rheumatic fever. In proof that it was to some extent infectious there was the fact that epidemics had been described, and numerous cases had occurred in certain houses. The injections into animals which he had spoken of were in nearly every case intravenous cases; but Dr. Varnou Shaw produced the same result by injections into the pericardial sac and into the joints. When drawing up the chart with reference to relapses, he, Dr. Watkins, put an arbitrary line; whenever the acute symptoms returned and remained for twenty-four hours he noted that as a relapse, simply to compare with other results; he did not think many of the cases indicated would be regarded as relapses. He knew of no means of distinguishing rheumatic tonsillitis from any other form except by bacteriological examination; and even then there was no very ready way of distinguishing the rheumococcus from other forms of streptococci. He did not quite understand Dr. Lambert's reference to formic acid. If formic acid caused rheumatic fever, then to treat it with formic acid was not homœopathy, but isopathy. With regard to the Johns Hopkins Hospital results, he had had his attention drawn to them; he did not think the men there drew enough blood from the patients to enable them to make a proper examination. It was necessary to extract about 5 cc. The experiments to which he had referred had been confirmed in France, and were being confirmed in Germany and in Edinburgh. The micrococcus had also been obtained from persons suffering from chorea; and, clinically, he thought most physicians must agree that chorea was of rheumatic origin. In regard to retinal hæmorrhages, the results given were for only two years, 1881 and 1886. *Journal of the British Homœopathic Society, July 1904.*

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